United States Court of Appeals
for the
District of Columbia Circuit

TRANSCRIPT OF RECORD

BRIEF FOR APPELLANT AND JOINT APPENDIX

United States Court of Appeals

For the District of Columbia Circuit

No. 18,073

9/5

HELENA RUBINSTEIN, INC.,
Appellant,

vs.

DAVID L. LADD, Commissioner of Patents,
Appellee.

APPEAL FROM A JUDGMENT OF THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF COLUMBIA

Civil Action No. 3332—61

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United States Court of Appeals
for the District of Columbia Circuit

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Statement of Questions Presented

1. Is the term "Pasteurized" merely descriptive or deceptively misdescriptive of a face cream so as to be unregistrable under 15 U. S. C. 1052(e)?

(Appellant alleges that the answer is in the negative).

2. When a trademark "Pasteurized" has been used exclusively and extensively by the Appellant for more than thirty years, in relation to face creams, may it be registered pursuant to 15 U. S. C. 1052(f)?

(Appellant alleges that the answer is in the affirmative.)

3. Has the Appellant's mark "Pasteurized" for cosmetic creams become distinctive of its goods in commerce rather than functioning as a description or misdescription of the goods?

(Appellant alleges that the answer is in the affirmative.)

4. Has the Appellant submitted sufficient evidence showing that the mark "Pasteurized" is not descriptive or misdescriptive of its product, but is in fact distinctive of the Appellant's goods in commerce and is it therefore registrable under Section 2(f) of the Lanham Act (15 U. S. C. 1052(f))?

(Appellant alleges that the answer is in the affirmative.)

United States Court of Appeals

For the District of Columbia Circuit

No. 18,073

Helena Rubinstein, Inc.,
Appellant,

vs.

David L. Ladd, Commissioner of Patents,
Appellee.

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35 U. S. Code 145 (66 Stat. 803) 1, 3

---

* Case chiefly relied upon is marked by asterisk.

Jurisdictional Statement

This is an action brought by the Appellant, Helena Rubinstein, Inc. against David L. Ladd, as Commissioner of Patents, to compel the registration of a trademark of the word "Pasteurized" for cosmetic face creams under the authority of 15 U. S. Code 1071 (Section 21 of the Lanham Act) and 35 U. S. Code 145 (66 Stat. 803).

Statement of Case

This is an appeal by Helena Rubinstein, Inc. from a judgment of the United States District Court for the District of Columbia, dated the 27th day of June 1963, dismissing plaintiff's complaint (76A).[1] Trial was commenced on May 14, 1963 before Hon. Joseph R. Jackson without a jury. On June 27, 1963, an opinion which constituted findings of fact and a conclusion of law was filed by the Court (72A-75A).

On April 4, 1925 Mrs. Helena J. Titus (now Madame Helena Rubinstein) filed an application to register the trademark Pasteurized Cream for facial and massage creams. The application was identified as Serial No. 212,219 and duly matured into Registration No. 210,650 on March 16, 1926 (Exhibit 3; 71A). The registration was pursuant to the Act of March 19, 1920. This registration expired on March 16, 1946.

The Trademark Act of July 5, 1946, known as the Lanham Act (15 U. S. C. 1051 *et seq.*) makes the following provisions with respect to registrations under the Act of 1920:

---

[1] Unless otherwise noted, references followed by "A" are to page numbers in the joint appendix.

> *Act of 1920.* Registrations now existing under the Act of March 19, 1920, shall expire 6 months after the effective date of this Act, or twenty years from the dates of their registrations, whichever date is later. Such registrations shall be subject to and entitled to the benefits of the provisions of the Act relating to marks registered on the supplemental register established by this Act, and may not be renewed unless renewal is required to support foreign registrations. In that event renewal may be effected on the supplemental register under the provisions of section 9 of this Act.

Appellant, as successor in interest to Mrs. Titus, did not own a corresponding foreign registration which would have required renewal of Registration No. 210,650 for its support. Accordingly, Appellant's right to renew was effectively eliminated by the provisions of the Lanham Act.

In order to maintain registration of its well known trademark, Appellant filed a new application on March 11, 1957, Serial No. 25,892 to register the mark "Pasteurized" for face cream.

Registration on the Principal Register was refused in an Office action dated August 16, 1957, it being alleged that the proposed mark appears to be merely descriptive of the goods. It was further alleged that the mark is so highly descriptive as to be incapable of distinguishing applicant's goods. Registration was further refused because of confusing similarity to Registration No. 375,501 of February 20, 1940 (Exhibit 2; 69A). This registration consists of the word "Pasteurized" and a triangular design for talcum powder, talc, body talc, bath dusting powder, face powder, deodorant powder, and after-shave talcum powder. In Registration No. 375,501, no claim is made to the word "Pasteurized" apart from the mark as shown in the drawing.

Subsequently, the Appellant acquired Registration No. 375,501 together with the appurtenant good will of the registrant and duly amended its application to recite ownership of the conflicting registration.

Thereafter, in a final rejection of August 16, 1960, the Examiner stated "Applicant's ownership of Registration 375,501 does not support its claim of registrability, as the term 'Pasteurized' is disclaimed therein".

Appellant duly appealed to the Trademark Trial and Appeal Board. The Trademark Trial and Appeal Board in a decision dated August 15, 1961, affirmed the Examiner's refusal of registration (Appellant's Exhibit 4, pp. 62-67; reported at 131 USPQ 152). The Appellant being dissatisfied with the decision of the Trademark Trial and Appeal Board has brought action in the Court below as provided by Section 21 of the Lanham Act (15 U. S. C. 1071) and 35 U. S. C. 145 as in the case of applicants for patents.

In bringing the instant Civil Action, the Appellant is entitled to a trial *de novo* as in the case of an applicant for a patent.

However, even prior to the commencement of this action, it was believed that the proceedings in the Patent Office contained sufficient evidence to warrant a reversal of the decision of the Trademark Trial and Appeal Board and the entry of an order directing the Commissioner of

Patents to issue a registration on Application Serial No. 25,892 filed March 11, 1957.

It is abundantly clear that Appellant has acquired common law rights during the past forty years which should be recognized by the grant of a registration on the Principal Register. Registration would be in the public interest because it would provide constructive notice of the Appellant's rights and would prevent persons from innocently becoming infringers.

The opinion of the Court below is found on pages 72A to 75A of the Appendix. It is immediately evident that the Court below gave no consideration to the fact that the Appellant had applied for registration under Section 2(f) of the Lanham Act (15 U. S. C. 1052(f)). The fact that the Appellant had pressed its claim under this Section of the statute is made evident by its supplemental response dated April 1, 1958, where its argument to the Commissioner of Patents states that registration was sought under Section 2(f) of the Lanham Act (Exhibit No. 4, pp. 13 and 14).

In further support of its claim of distinctiveness under Section 2(f) of the Lanham Act, the Appellant submitted a large number of exhibits which were filed in the Patent Office on February 26, 1960 (Exhibit 4, pp. 28-38) again urging registration pursuant to Section 2(f).

In addition, further evidence was taken in the Court below, both at the trial and by depositions (Exhibit 1, 27A-67A) introduced into evidence, all tending to show distinctiveness of the Appellant's mark pursuant to the provisions of said Section 2(f) of the Lanham Act. For example, the Appendix herein shows on page 10A that Lois Williams testified that she had been working in cosmetics since 1942, and that as far as she knew there was no other cosmetic product or face cream with the name "Pasteurized" in it. She also testified on page 11A:

> "Q. Do you believe yourself, from seeing the product, that it is in fact subjected to the chemical process of pasteurization? A. No, I am sure it is not.
>
> Q. Would it make any difference to you? A. No.
>
> Q. Would you say from your experience that this product is a popular product in Lansburgh's? A. It is one of our most popular sellers.
>
> Q. And it has been sold as a popular product for many years? A. Yes, it is one of the first creams in their line; one of the oldest ones.
>
> Q. Now, what do you primarily associate the term Pasteurized Face Cream with, ma'am? A. Helena Rubinstein.
>
> Q. Why? A. It is the only Pasteurized Face Cream, and if anybody asks for that it automatically comes to your mind as Rubinstein.
>
> Q. Do many people come into the store and ask for the cream by shortened names? A. Not if they want Pasteurized Rubinstein. They use that term 'Pasteurized Cream'.
>
> Q. Do they come in often and ask you just for Pasteurized Cream? A. No, Rubinstein Pasteurized Cream.
>
> Q. Now, in your opinion, from your experience, what is the recognition of purchasers of Pasteurized Cream? What do they think of it as? I don't mean as to whether it is a good product, but as to its origin. A. I don't believe that they think of it as or have any idea that it needs to be Pasteurized

in that term. It doesn't mean that to them. It is a good cream and one they recognize as being a valuable cream to them."

Miss Sabatini, who was in the cosmetic line since 1939 (13A), testified on page 14A that the Appellant's "Pasteurized Face Cream" was a very popular product; that she did not believe that this face cream was actually pasteurized in the scientific sense; that the public had never questioned her about any such alleged pasteurization; and further stated:

> "Q. Do you think the public believes that the cream is actually pasteurized? A. No, I don't.
>
> Q. Now, with what do you primarily associate the term "Pasteurized Face Cream"? A. I primarily associate the words 'Pasteurized Face Cream' with Helena Rubinstein.
>
> Q. Why? A. Because that is just a name that has been used, and when a customer comes in and says 'I want Pasteurized Face Cream' it immediately brings Helena Rubinstein to mind, and I get her Helena Rubinstein Pasteurized Cream.
>
> Q. To your knowledge, in the twenty-four years you have been in the cosmetic field, have you ever seen any other cosmetic cream bearing the label or marked 'Pasteurized'? A. No, I never have" (14A, 15A).

The witness further stated on page 23A:

> "Q. Ma'am, in your opinion, is 'pasteurized' a name for a face cream by Helena Rubinstein or a form of the cream itself? A. In my opinion, it is the name for Helena Rubinstein's Pasteurized Face Cream and that is all."

Justin Deal, who is a graduate chemist, testified on page 29A of the Appendix:

> "Q. Are you familiar with the product made by Helena Rubinstein known as 'Pasteurized' face cream? A. Yes, sir.
>
> Q. Is this product, in fact, pasteurized? A. No, sir.
>
> * * * * *
>
> Q. Now, with direct reference to this specific product, is this product pasteurized, as you have explained by your definition? A. No, there is no objective to pasteurizing the cream."

and on page 30A of the Appendix:

> "Q. You've testified that the cream is heated to 130 degrees. What is the reason that 'Pasteurized' face cream is heated in the manufacturing process? A. It's heated as part of the routine procedure in producing the creams for the purpose of emulsifying the ingredients."

Miss Esposito, employed by the Appellant (31A), testified as to large sales of Appellant's "Pasteurized Face Cream" on page 33A. Thus for the last ten years, she testified as to the sales of more than 6,000,000 units. Page 48A of the Appendix shows that the retail price is $1.50 and $2.25, so that the above units prove sales of at least $10,000,000.00.

Miss Esposito also testified (34A) that the product was sold in all major drug stores, all department stores, and smaller drug stores in every city and every town.

We submit that the foregoing indicates tremendous sales of Pasteurized Face Cream exclusively by the Appellant under conditions proving distinctiveness of the mark as indicating only a product of the Appellant.

Evidence of consumers is also found in the record. Thus at page 63A of the Appendix we find:

> "Q. Let me ask you one more question, as a purchaser, and as an American housewife. When you started using this cream, did you ever buy the cream because you thought it was pasteurized, like milk? A. I never associated it with anything, really. All I knew was that it was Helena Rubinstein 'Pasteurized' cream and that's all I ever knew. I didn't associate it with anything.
>
> Q. You did associate it with Helena Rubinstein? A. Oh yes, but not with milk or anything.
>
> Q. Nothing to do with the pasteurized process? A. No, nothing like that. No, it didn't come to my mind at all."

Statutes Involved

Lanham Act: 15 U. S. C. 1051 et seq. 66 Stat. 792

Sec. 2. Trademarks registrable on the principal register.

No trademark by which the goods of the applicant may be distinguished from the goods of others shall be refused registration on the principal register on account of its nature unless it——

* * * * *

(e) consists of a mark which, (1) when applied to the goods of the applicant is merely descriptive or deceptively misdescriptive of them, or (2) when applied to the goods of the applicant is primarily geographically descriptive or deceptively misdescriptive of them, except as indications of regional origin may be registrable under section 4 hereof, or (3) is primarily merely a surname;

(f) except as expressly excluded in paragraphs (a), (b), (c) and (d)[2] of this section, nothing herein shall prevent the registration of a mark used by the applicant which has become distinctive of the applicant's goods in commerce. The Commissioner may accept as prima facie evidence that the mark has become distinctive, as applied to the applicant's goods in commerce, proof of substantially exclusive and continuous use thereof as a mark by the applicant in commerce for the 5 years next preceding the date of the filing of the application for its registration (15 U. S. C. 1052, amended by Public Law 593, 82d Cong., approved July 19, 1952, 66 Stat. 792).

Sec. 46(b). Existing registrations under prior acts.

* * * * *

Act of 1920. Registrations now existing under the Act of March 19, 1920, shall expire 6 months after the effective date of this Act, or twenty years from the dates of their registrations, whichever date is later. Such registrations shall be subject to and entitled to the benefits of the provisions of this Act relating to marks registered on the supplemental register established by this Act, and may not be renewed unless renewal is required to support foreign registrations. In that event renewal may be effected on the supplemental register under the provisions of section 9 of this Act.

Statement of Points

1. The term "Pasteurized" does not describe a face cream or a process used in the manufacture of face creams. Pasteurization is a specific heating process designed to

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[2] Paragraphs (a), (b), (c) and (d) relate to immoral matter, the coat of arms and insignia of the United States, the names of individuals, similarity to another mark and other situations which are irrelevant to this appeal.

inhibit bacterial growth. It has no meaning or significance in relation to a face cream in which bacterial growth presents no problem as opposed to edible milk or cream where such growth is an important factor. Accordingly, "Pasteurized" is not descriptive and is, therefore, registrable as a trademark for face creams. The lower Court's rejection of this contention was error.

2. Even if "Pasteurized" is by some stretch of the imagination descriptive (or misdescriptive), it is, nevertheless, registrable pursuant to the clear mandate of 15 U. S. C. 1052(f). This statute provides that a mark shall be registered if it has become distinctive of the applicant's goods. The statute further provides that a minimum period of five years of substantially exclusive and continuous use by an applicant may be accepted as *prima facie* evidence of distinctiveness. In this case, Appellant has proven 40 years of such usage and there is no rebutting evidence of any consequence. It was error for the lower Court to disregard this contention.

3. The Court below was in error since it apparently overlooked Appellant's application under 15 U. S. C. 1052(f) and did not give sufficient weight to the undisputed testimony as to the required distinctiveness of the trademark "Pasteurized".

Summary of Argument

"Pasteurized" is a trademark owned by the Appellant as applied to face creams. It is not descriptive because Appellant's face creams, or any face creams, are not subjected to a pasteurizing process which in fact would be pointless and incongruous. On the contrary, "Pasteurized" face cream is rather a clever play on words since face cream is not, of course, an edible product such as dairy cream. Accordingly, "Pasteurized" is fanciful and registrable under 15 U. S. C. 1052(e).

The term is further not deceptively misdescriptive. No evidence in the record was submitted in support of such a contention. On the contrary, Appellant showed that the term has no real meaning to the public, apart from designating Appellant's product (14A, 15A, 29A, 63A).

In any event, and as a decisive and decisional aspect of this appeal, the Appellant has indisputably proven exclusive usage of its mark "Pasteurized" for 40 years. It has enjoyed tremendous sales. It has advertised this mark throughout the years. The mark is distinctive of Appellant's goods and should be registered pursuant to well known principles of law and in accordance with 15 U. S. C. 1052(f).

Argument

We submit that the Court below gave no proper consideration to the fact that this application was based on acquired distinctiveness as provided by Section 2(f) of the Lanham Act and as was urged in the Patent Office. In this connection we refer to the case of *Gold Seal Co.* v. *Weeks*, 129 F. Supp. 928 (D. C. Dist. Col. 1955). In that case it had been found (p. 935) that the product sold by the plaintiff, under the mark "Glass Wax" *actually contained no wax*. Nevertheless, it was held (see p. 940 of decision) that the mark was neither descriptive nor deceptive and that it was registrable. The Court analyzed Section 2(f) on page 935 of the decision. We submit that this case was properly decided and indicates that Appellant here is entitled to registration. The "*Glass Wax*" case was affirmed sub nom. by this Court, 97 App. D. C. 282, 230 F. 2d 832. Certiorari was denied at 352 U. S. 829 (1956).

Thereafter, an opposition to the registration of "Glass Wax" was dismissed (*S. C. Johnson & Son, Inc.* v. *Gold Seal Co.*, 120 USPQ 276).

Recently in the case of *Day-Brite Lighting, Inc.* v. *Sta-Brite Fluorescent Mfg. Co.*, 308 F. 2d 377 (5th Cir. 1962); the Court held that since the mark "Day-Brite" had become distinctive of plaintiff's goods in commerce it was immaterial that it was descriptive of the goods. It stated at page 382 of the decision that since the mark had acquired a secondary meaning, it would be protected irrespective of any original weakness, and it referred to 15 U. S. Code 1052(f). It is seen, therefore, that whereas the term "Day-Brite" would seem most descriptive of a lighting device, it was nevertheless held registrable under 15 U. S. C. 1052(f).

The Patent Office normally takes the same view as Appellant urges herein. Thus in the case of *In re Fleet-Wing Corporation*, 122 USPQ 335 (1959), the Trademark Trial & Appeal Board reversed the Patent Office Examiner and held that the term "Certified" was registrable for motor oil under Section 2(f). The Applicant had used the mark "Certified" for more than twenty years. It was held that its use of the term "Certified" was as a trademark, *not in its primary and literal sense*. It was further pointed out that in twenty years more than 6,000,000 gallons of its "Certified" motor oil had been sold under that mark, that no others sold any "Certified" motor oil, and that the mark was therefore registrable under Section 2(f). Appellant's mark "Pasteurized" is entitled to the same treatment.

The same law is followed in this Circuit. Thus in the case of *Armco Steel Corporation* v. *Watson, Comr. Pats.*, 188 F. Supp. 554 (D. C. Dist. Col. 1960), an action just like the instant one was brought against the Commissioner of Patents to require him to register the trademark. In that case, Judge Holtzoff stated:

> "The rule that descriptive or geographical terms may not be used as trademarks is, however, subject to a limitation. If the mark by which the applicant for registration denotes his product has been used for such a long period of time and so comprehensively and exclusively that it has come to mean his product in the eyes of the public, so that whenever the words are used they call up in the minds of the consuming public the applicant's goods, the words, though originally descriptive, may still be employed as a trademark. At times it is said, perhaps inaccurately, that under these circumstances the term acquires a secondary meaning."

Judge Holtzoff further pointed out the particular evidence which convinced him that the trademark should be held registrable. Such evidence consisted of proof of large sales and testimony to the effect that consumers recognized the mark as being associated exclusively with the applicant. That evidence substantially paralleled the evidence introduced by the Appellant in this case.

The trademark "Pasteurized" for face cream should be held registrable to the Appellant under principles often expounded by the Patent Office. For example, in the case of *In re De-Raef Corp.*, 120 USPQ 318 (1959), the Patent Office Trademark Trial & Appeal Board reversed the Examiner and held that the mark "Cultured" was not merely descriptive of a prepared pancake mix. It was held that "Cultured" was descriptive of *milk*, but it stated that pancake mix was not milk. Note how parallel the circumstances are to this case. As we shall point out later, milk may be pasteurized and so may cream be pasteurized, but a face cream is by no means pasteurized. The term "Pasteurized" as applied to face cream is simply fanciful and has perhaps what we might call a "double entendre". As a matter of fact, the Trademark Trial & Appeal Board held that the term "Cultured" was registrable for pancake mix, even though it did suggest that some cultured milk was used as an ingredient of the product.

In the case of *In re Purex Corp., Ltd.*, 138 USPQ 594 (1963), the Patent Office Trademark Trial & Appeal Board held that "Bubble Bath" described a toilet preparation, but that the term was highly incongruous as applied to a car washing compound. It was, therefore, held registrable. In the same way, "Pasteurized" certainly describes milk or cream. However, it is highly incongruous as applied to a face cream.

The Term "Pasteurized" Is Not Descriptive of Face Creams

We urge here that the term "Pasteurized" is not descriptive of face creams so that it is registrable even under Section (e) of 15 U. S. C. 1052. However, if there is any doubt as to this, it is registrable under Section (f) as above set forth. In either event, it is not so highly descriptive that it may not be registered.

The Court below took the position that the Appellant's face cream had been pasteurized (73A). This is a misunderstanding of the facts. The evidence at the trial simply shows that the ingredients of Appellant's face cream had been subjected to a heating process which might fortuitously come within the range normally used for pasteurization processes. However, this is a far cry from supporting a finding that the Appellant's face cream was in fact pasteurized.

As was pointed out above, Mr. Justin Deal, a chemist, stated that the Appellant's face cream was indeed heated to 130 or 150 degrees (30A). This may be and probably is the heating range normally used in pasteurizing of milk or cream. However, Mr. Deal stated that the purpose of the Appellant's heating process was simply to emulsify (or mix) the ingredients. This does not constitute pasteurization. If a barber applies a hot towel to a customer's face, he does not pasteurize his face even if the towel is 130 or 150 degrees. We do not pasteurize ourselves by taking a hot bath.

The term "Pasteurization" is applied to a process which inhibits bacterial growth and is highly incongruous as applied to a face cream. A face cream may be in an open jar, or in any event may rest on a woman's boudoir for weeks, months, or possibly years. Its bacterial content does not thereby change in the manner of milk or cream. It is not kept in a refrigerator. It simply does not have the characteristics of milk or cream. In short, it is not pasteurized even if it has once been heated during manufacture to mix the ingredients thereof.

We submit that to use the term "Pasteurized" for a face cream, is a clever play on words because a face cream is not the type of cream which we consume internally. Accordingly, the term "Pasteurized" is not descriptive of a face cream and should be held registrable, the face cream having not been submitted to pasteurization in the normally understood sense of the word.

We repeat here that even if the mark is descriptive or possibly misdescriptive, it may still be registered as was held by the Court in the above-mentioned case of *Gold Seal Co. v. Weeks, supra.* In that case, as was stated above, the product "Glass Wax" contained no wax, but it nevertheless was stated to be registrable after it was found to be distinctive under Section 2(f). It may be pointed out that the end of this decision contained a finding that the term "Glass Wax" was not inherently incapable of functioning as a trademark and was not unregistrable. The decision of the Court below in this case, is not consistent with the "Glass Wax" decision, in the same Court.

Conclusion

The Appellant has a most valuable trademark in its mark "Pasteurized" for face creams. No one else uses or has any right or necessity for using the term. As was pointed out above, the term is inappropriate for such goods and could only be used by others to unfairly poach upon Appellant's trademark rights, a situation which has up to now, for forty years, not occurred.

To deny the Appellant registration is contrary to the intention of Section 2(f) of the Lanham Act (15 U. S. C. 1052 f). The exclusivity and wide usage of the Appellant's trademark "Pasteurized" as above set forth, entitles it to register it for face creams pursuant to this statute which is precisely in point, and the terms of which have been complied with by the Appellant.

The decision of the Court below should be reversed.

Respectfully submitted,

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JOINT APPENDIX

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WITNESSES FOR PLAINTIFF

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Hattie M. Sabatini:

Direct 13A

Cross 17A

Re-direct 23A

Docket Entries

Date Proceedings

1961

Oct. 10 Complaint, appearance filed

Oct. 10 Summons, copies (3) and copies (3) of Complaint issued

Atty Gen 10-14-ser 10-11-61 U. S. Atty ser 10-10-61

Nov. 21 Answer of deft to complaint; c/m 11-20-61; Appearance of Clarence W. Moore, Solicitor filed

Nov. 21 Calendared (X)

1963

Jan. 16 Motion of pltff. for 60 day continuance c/m 1-15-63, MC 1-16-63. filed

Jan. 17 Motion of Pltff. for 60 days continuance of trial granted. (fiat) (X) (AC/X) McGuire, C. J.

Mar. 25 Notice of pltff to take depositions of Thelma Cole, Bea Mushlin, Angela Monti, Justin Deal and Cecelia M. Esposito, c/m filed

Apr. 22 Depositions of Justin Deal, Cecelia Esposito, Angela Monti, Bluma Mushlin, Roslyn Steinberg, and Thelma Cole, dated 4-10-63; Exhibits (9); filed

May 9 Trial Brief for pltff. exhibits (2) filed

May 14 Hearing begun and concluded. Finding for defendant vs. plaintiff. Counsel for defendant to present proposed findings of fact, conclusions of law and an order. (Rep: Jack Maher) Jackson, J.

Docket Entries

Date	Proceedings
June 27	Opinion finding for defendant vs. plaintiff. (N) Jackson, J.
June 27	Judgment dismissing complaint with costs against plaintiff. (N) Jackson, J.
July 26	Notice of appeal by plaintiff from order 6-27-63 Copy to G. Roemig. 5.00 deposit by Sandground. filed
Aug 9	Transcript of proceedings pp 1-40; May 14, 1963. (Rep. Jack Maher) Court's copy filed
Aug 13	Transcript of proceedings May 14, 1963, pages 1 thru 40, (Rep: Maher) (Atty's. copy) filed
Aug 22	Exhibits by pltf (4). filed
Aug 26	Record on Appeal delivered to U. S. C. A.; Deposit by Sandground, $.95
Aug 26	Receipt from U. S. C. A. for original record filed

Complaint

(To Obtain Registration of a Trademark)

IN THE

UNITED STATES DISTRICT COURT

For the District of Columbia

Civil Division

Civil Action No. ......

—o—

[SAME TITLE]

—o—

1. The jurisdiction for the United States District Court for the District of Columbia is founded on 15 U. S. C. 1071 (Sec. 21 of the Lanham Act) and 35 U. S. C. 145 (66 Stat. 803).

2. On March 11, 1957, Plaintiff filed an application to the Commissioner of Patents to register the trademark "Pasteurized" for face cream in Class 51, Cosmetics and Toilet Preparations.

3. At the time of filing the application referred to in Paragraph 2, Plaintiff was the owner of expired Registration No. 210,650 of March 16, 1926, for Pasteurized Cream issued under the Act of March 19, 1920, which registration was not renewable at the time of its expiration as provided by 15 U. S. C. 1051 (Sec. 46(b) of the Lanham Act).

4. The Application referred to in Pararaph 2 above was filed in order to effect re-registration of the trademark "Pasteurized".

5. On August 16, 1957, the Examiner in charge of Application Serial No. 25,892 refused registration on the ground that the term "Pasteurized" is incapable of distinguishing Plaintiff's goods and also because of confusing similarity to Registration No. 375,501 issued February 20, 1940, for the mark "Pasteurized" for talcum powder, talc, body talc, bath dusting powder, face powder, deodorant powder, and after-shave talcum powder.

6. On March 2, 1959, Plaintiff amended its Application Serial No. 25,892 to allege ownership of Registration No. 375,501 on the basis of which registration had previously been refused. Plaintiff in February 1959 purchased all right, title and interest in Registration 375,501, and on August 2, 1959, recorded in the trademark records of the Patent Office assignments to plaintiff of such registration and the appurtenant goodwill of the assignee.

7. On February 28, 1960, Plaintiff filed in its Application Serial No. 25,892, evidence of extensive sales and advertising during the period from 1950 through 1959 claiming distinctiveness of Plaintiff's goods in commerce as provided by 15 U. S. C. 1052 (Sec. 2(f) of the Lanham Act).

8. On August 16, 1960, Application Serial No. 25,892 was finally rejected by the Examiner.

9. On October 11, 1960, Plaintiff appealed to the Trademark Trial and Appeal Board from the final rejection of August 16, 1960.

10. On August 15, 1961, the Trademark Trial and Appeal Board affirmed the refusal of the registration in a decision attached hereto as Exhibit "A".

11. Plaintiff is dissatisfied with the decision of the Trademark Trial and Appeal Board of August 15, 1961, affirming the refusal of registration, and asserts such decision was arbitrary and capricious and not founded upon substantial evidence.

WHEREFORE, Plaintiff prays that this Court adjudge that Plaintiff is entitled to registration of its trademark "Pasteurized" for face cream.

AMRAM, HAHN & SUNDLUN
BRUCE G. SUNDLUN
MARK B. SANDGROUND
944 Washington Building
Washington 5, D. C.

EDMUND M. SQUIRE
50 Church Street
New York 7, New York
Of Counsel

Answer to the Complaint

UNITED STATES DISTRICT COURT

For the District of Columbia

Civil Action No. 3332—61

[SAME TITLE]

Clarence W. Moore, Solicitor,
United States Patent Office,
Washington 25, D. C.
Attorney for Defendant

To the Honorable the Judges of the United States District Court for the District of Columbia

1. The defendant admits the allegations of paragraph 1 of the complaint.

2. Except for denying that "Pasteurized" is a trademark, the defendant admits the allegations of paragraph 2 of the complaint.

3. The defendant admits that expired Registration No. 210,650 of March 16, 1926, for Pasteurized Cream was issued under the Act of March 19, 1920. The defendant asserts that he is without knowledge or information sufficient to form a belief as to the truth of the allegation that said registration was not renewable at the time of its expiration as provided by 15 U. S. C. 1051 (Sec. 46(b) of the Lanham Act). Otherwise the defend-

ant denies the allegations of paragraph 3 of the complaint.

4. The defendant asserts that he is without knowledge or information sufficient to form a belief as to the truth of the allegations of paragraph 4 of the complaint.

5. The defendant admits the allegations of paragraph 5 of the complaint.

6. The defendant admits that on March 2, 1959, Plaintiff amended its Application Serial No. 25,892 to allege ownership of Registration No. 375,501 on the basis of which registration had previously been refused. The defendant asserts that he is without knowledge or information sufficient to form a belief as to the truth of the allegation that Plaintiff in February 1959 purchased all right, title and interest in Registration 375,501. The defendant denies the remaining allegations of paragraph 6 of the complaint.

7, 8, 9. The defendant admits the allegations of paragraphs 7, 8, and 9 of the complaint.

10. The defendant admits that on August 15, 1961, the Trademark Trial and Appeal Board affirmed the refusal of the registration in a decision. The defendant asserts that since no copy was served upon him, he is without knowledge or information sufficient to form a belief as to the truth of the allegation that the decision is attached to the complaint as Exhibit "A".

11. The defendant denies the allegations of paragraph 11 of the complaint.

Further answering, the defendant asserts that the plaintiff is not entitled to registration of "Pasteurized" for face cream for the reasons given in the actions of the Examiner of Trademarks dated August 16, 1957, August 22, 1958, March 17, 1959, and September 2, 1959, the final refusal of registration, the Examiner's statement, and the decision of the Trademark Trial and Appeal Board in plaintiff's application Serial No. 25,892, filed March 11, 1957. Profert hereby is made of copies of the said actions, final refusal, statement and decision.

Respectfully submitted,

C. W. Moore
Solicitor, U. S. Patent Office
Attorney for Defendant

November 20, 1961

Minutes of Trial, May 14, 1963

UNITED STATES DISTRICT COURT

For the District of Columbia

Civil Action No. 3332—61

Helena Rubinstein, Inc., 655 Fifth Ave.,
New York 22, N. Y.

v.

David L. Ladd, Commissioner of Patents,
Washington, D. C.
Defendant.

Washington, D. C.
May 14, 1963

* * * * *

(7)

The Court: Call your first witness.

Thereupon—Lois Williams was called as a witness by and on behalf of the plaintiff and, having been first duly sworn, was examined and testified as follows:

(8)

By Mr. Sandground:

Q. Would you state your full name and address? A. Lois Williams, 338 Ingraham Street, Washington, D. C.

Lois Williams—for Plaintiff—Direct

Q. Miss Williams, by whom are you employed and what is the nature of your employment? A. I am employed by Lansburgh's. I am associate buyer in cosmetics and I have been working in cosmetics since 1942.

Q. Is Lansburgh's department store in the City of Washington? A. Yes, it is.

Q. How many branches does Lansburgh's have? A. The main store and two branches.

Q. What are your duties as the assistant buyer of cosmetics? A. Well, one of the main ones is I sell. And I have been selling. Also in buying and selecting merchandise and in the merchandising end.

Q. Have you had experience in selling cosmetics across the counter to the public? A. Yes, I have had fifteen years of it, approximately.

Q. Have you had experience in buying cosmetics from manufacturers and manufacturers' representatives? A. I have been associate buyer and assistant buyer since 1955.

(9)

Q. As part of your duties must you familiarize yourself with the products in the cosmetic lines of the different manufacturers? A. Yes, you do that in selling.

Q. Now directing your attention to a product called "Pasteurized" Face Cream, are you familiar with this product? A. Yes.

Q. How long have you known about this product? A. Since I started selling cosmetics it has been on the market.

Q. How long would you say you have known about Pasteurized Face Cream? A. About nineteen years.

Q. In your experience, have you ever seen, heard of or sold another cosmetic product or face cream with the name "Pasteurized" in it? A. So far as I know, there is none other on the market.

Q. Do you believe yourself, from seeing the product, that it is in fact subjected to the chemical process of pasteurization? A. No, I am sure it is not.

Q. Would it make any difference to you? A. No.

(10)

Q. Would you say from your experience that this product is a popular product in Lansburgh's? A. It is one of our most popular sellers.

Q. And it has been sold as a popular product for many years? A. Yes, it is one of the first creams in their line; one of the oldest ones.

Q. Now, what do you primarily associate the term Pasteurized Face Cream with, ma'am? A. Helena Rubinstein.

Q. Why? A. It is the only Pasteurized Face Cream, and if anybody asks for that it automatically comes to your mind as Rubinstein.

Q. Do many people come into the store and ask for the cream by shortened names? A. Not if they want Pasteurized Rubinstein. They use that term "Pasteurized Cream".

Q. Do they come in often and ask you just for Pasteurized Cream? A. No, Rubinstein Pasteurized Cream.

Q. Now, in your opinion, from your experience, what is the recognition of purchasers of Pasteurized Cream? What do they think of it as? I don't mean as to whether it is a

(11)

good product, but as to its origin. A. I don't believe that they think of it as or have any idea that it needs to be Pasteurized in that term. It doesn't mean that to them. It is a good cream and one they recognize as being a valuable cream to them.

Q. Now, from your experience, can you tell us whether the origin of manufacture is important to the public in buying cosmetics? A. Yes, they buy by trade name greatly.

Q. What does the trade name "Pasteurized Face Cream" mean to you in the purchasing end of the business? A. It stands for Rubinstein and Company.

Q. Does it stand for anyone else? A. No.

Q. And from your fifteen years of dealing with the public, have you any opinion as to the public acceptance of the word "Pasteurized" Face Cream? A. Well, it is highly acceptable. A great majority of people use it.

Q. Now, may I ask you a hypothetical question, ma'am? Assuming that you had two jars of the same size and shape and one was labeled "Pasteurized Face Cream", Helena Rubinstein, and the other was just "Pasteurized Cream", have you an opinion as to which product the women would ask for and would be more saleable? A.

(12)

Pasteurized Rubinstein.

Q. Why? A. The other one wouldn't have a meaning to it. There wouldn't be a customer acquainted with it.

Q. And, in your opinion, is there any secondary meaning to the term "Pasteurized Face Cream"? A. Helena Rubinstein.

Mr. Sandground: No further questions.
You may examine.
Mr. Roeming: No questions.
The Court: You may be excused.
Call your next witness.
Mr. Sandground: I would like to call Mrs. Sabatini.

Thereupon HATTIE M. SABATINI was called as a witness by and on behalf of the plaintiff and, having been first duly sworn, was examined and testified as follows:

Direct Examination by Mr. Sandground:

Q. Would you state your full name and address? A. Hattie M. Sabatini, 822 50th Avenue, Capitol Heights, Maryland.

Q. Mrs. Sabatini, by whom are you employed? A. S. Kann's Company.

(13)

Q. Is that a department store in Washington? A. Yes.

Q. What is the nature of your employment with Kann's Department Store? A. I am the assistant buyer in the cosmetics department.

Q. How many years have you been employed in the cosmetic line? A. I have been in the cosmetic line since 1939.

Q. What are your duties as an assistant buyer in the cosmetics department? A. Well, I buy and supervise the floors and sell and fill in generally where I am needed in the department.

Q. And have you had experience in selling cosmetics to the public? A. Yes, I have.

Q. For how many years now? A. Approximately twenty-four years.

Q. And have you had experience in buying cosmetics from manufacturers' representatives and from manufacturers? A. Yes, I have.

Q. As part of your duties, are you familiar generally with the line of products sold by the leading manufacturers of cosmetics in the United States? A. Yes, I am.

(14)

Q. Now directing your attention to a product, Helena Rubinstein's Pasteurized Face Cream, are you familiar with this product? A. Yes, I am.

Q. How long have you been familiar with the product? A. Ever since I have been in the cosmetics industry.

Q. Have you sold it for this length of time? A. Yes, I have.

Q. Is it a popular product? A. Yes, it is a very popular product.

Q. Do you believe that this face cream is actually pasteurized in the scientific bacteriological sense? A. No, I don't.

Q. Do you think it makes any difference? A. No, I don't.

Q. Do you think it makes any difference to the public? A. No, in all the years I have been selling it I have never been questioned about it.

Q. Do you think the public believes that the cream is actually pasteurized? A. No, I don't.

Q. Now, with what do you primarily associate the term "Pasteurized Face Cream"? A. I primarily associate the words "Pasteurized Face Cream" with Helena Rubinstein.

(15)

Q. Why? A. Because that is just a name that has been used, and when a customer comes in and says "I want Pasteurized Face Cream" it immediately brings Helena Rubinstein to mind, and I get her Helena Rubinstein Pasteurized Cream.

Q. To your knowledge, in the twenty-four years you have been in the cosmetic field, have you ever seen any other cosmetic cream bearing the label or marked "Pasteurized"? A. No, I never have.

Q. Now, do you believe that there is any recognition by purchasers—the public—of the term "Pasteurized Face Cream"? A. Yes, I do.

Q. And what do they recognize this to be? A. Well, if the customer walks in and says "I want a face cream" ordinarily you go and get any face cream. And then if they say "I am sorry, I want Helena Rubinstein's Pasteurized Face Cream" then you know it is Rubinstein's.

Q. Now, in your opinion, is the origin of manufacture, or the name of the company that makes the product, important in the sales of cosmetics to women throughout the country? A. Yes, it is.

Q. Why is this? A. Well, because some customers like

(16)

one line of products and some like another line of products.

Q. To your knowledge, has there been extensive advertising of Helena Rubinstein's Pasteurized Face Cream? A. Yes, there has.

Q. And do you have an opinion as to whether the term "Pasteurized Face Cream" is primarily associated with Helena Rubinstein, the manufacturer, or with the cream itself? A. I think it is associated with the manufacturer; the cream and the manufacturer really.

Q. Now I would like to ask you a hypothetical question. Assuming that on the counter in your store there were two identical jars of cream containing the same product, basically about the same price, and on one jar was Helena Rubinstein Pasteurized Face Cream, which you stated you are familiar with, and on the other jar was Pasteurized Face Cream. Do you have an opinion as to which product you could more easily sell and which would be more readily accepted by the buying public? A. Well, if the customer would ask for Pasteurized Face Cream I would immediately associate it with Helena Rubinstein. If there were two creams on the table, for instance, and the customer walks up and picks up the one cream and says "Oh, I thought it was Pasteurized Face Cream" I would immediately say "You want Helena Rubinstein".

(17)

Q. Why is that? A. Because the name "Pasteurized Face Cream" is associated with Helena Rubinstein.
Q. Is it associated with anything else? A. No.

Mr. Sandground: Thank you.
You may examine, sir.
The Court: Have you any cross-examination?
Mr. Roeming: Yes, Your Honor.
May I have these exhibits identified respectively as defendant's exhibit 2, which is labeled with the name "Coty", and defendant's exhibit 3, which is labeled with the name "Tussy"?
The Court: They may be marked for identification.
The Deputy Clerk: Defendant's Exhibits 2 and 3 for identification.

(Defendant's Exhibits No's 2 and 3 were marked for identification.)

Mr. Roeming: For convenience, at this time, I will also have identified as Defendant's Exhibit 1 a product of Helena Rubinstein, Herb Essence

Body Smooth, which was used in the taking of depositions in this case and which I indicated at the time of the taking of the depositions that

(18)

I would introduce as Defendant's Exhibit 1.

The Court: It may be received in evidence.

The Deputy Clerk: Defendant's Exhibit Number 1.

(Defendant's Exhibit No. 1 was received in evidence.)

Mr. Roeming: As defendant's exhibit 4 I am putting in one of the specimens of the photograph in the application.

The Court: It may be received.

The Deputy Clerk: Defendant's Exhibit Number 4 is received in evidence.

(Defendant's Exhibit No. 4 was received in evidence.)

Mr. Roeming: May the record show that I am handing to the witness defendant's exhibit 4?

The Court: It may.

Mr. Roeming: Does Your Honor wish to see the exhibit in detail?

The Court: You can show it to me after you have examined her. I think I saw it anyhow.

Cross-Examination by Mr. Roeming:

Q. Is that jar familiar to you as is shown in the picture? A. Yes.

(19)

Q. Now on that jar do you find any description of the product? A. A perfect cleansing cream for beauty aid, Pasteurized Face Cream.

Q. Now, do you find any identification of the manufacturer on that? A. Yes, on the bottom, Helena Rubinstein.

Q. Thank you. Now showing you defendant's exhibit 2——

The Court: For identification.
Mr. Roeming: Yes, Your Honor.
The Court: What is it?

By Mr. Roeming:

Q. Would you read what you find on the front face?

The Court: Why don't you ask her what it is?

By Mr. Roeming:

Q. What is this product? A. Coty's Vitamin A and D Complexion Cream.

The Court: Do you tender it in evidence?
Mr. Roeming: I would.
The Court: Do you object, counsel?
Mr. Sandground: I would object to its admission. I don't mind his asking questions about it. I would object to it being admitted in evidence, Your Honor, on the ground of materiality and relevancy. That is not the product in question.

(20)

It certainly is not material or relevant; and I don't think what anyone else makes or what anyone else does with their labelling should be binding or is properly relevant in this case.

The Court: The objection is overruled. Have it marked in evidence.

The Deputy Clerk: Defendant's Exhibit Number 2 is received in evidence.

(Defendant's Exhibit No. 2 was received in evidence.)

Mr. Sandground: May I have an exception to Your Honor's ruling?

The Court: There is always an exception, automatically.

By Mr. Roeming:

Q. What identification of source of product do you find on that particular product? A. Do you mean the manufacturer?

Q. Who makes it? A. Coty.

Q. How would you describe the product? A. It is a Vitamin A and D Complexion Cream.

Mr. Roeming: Thank you. I am showing the witness defendant's exhibit 3, which has already been identified, and I move that it be entered in evidence.

(21)

The Court: Ask her what it is.

The Witness: It is Tussy Emulsified Cleansing Cream.

By Mr. Roeming:

Q. On that product what identification do you find as to who sells it?

The Court: I assume you have the same objection?

Mr. Sandground: Yes, Your Honor.

The Court: The same ruling.

Mr. Sandground: Thank you, Your Honor.

The Deputy Clerk: Defendant's Exhibit Number 3.

(Defendant's Exhibit No. 3 was received in evidence.)

By Mr. Roeming:

Q. On that product, what do you find on the face of it that indicates to you where it comes from? A. The manufacturer's name, Tussy.

Q. And what description of the product do you find on that jar? A. Emulsified Cleansing Cream.

Q. Now I have this question: How do you distinguish between an emulsified cleansing cream and the plaintiff's pasteurized face cream?

Mr. Sandground: I object to that, Your Honor.

(22) There is no foundation——

The Court: Overruled. This is cross-examination.

The Witness: Well, the public is so educated that they know what cream they want. We do have a few customers coming in that don't know what they want. We have representatives to represent these lines. If a customer comes in and says she wants emulsified cleansing cream you associate the word "emulsified" with Tussy. If a customer comes in and says she wants Pasteurized Face Cream you associate the word "Pasteurized" with Helena Rubinstein.

By Mr. Roeming:

Q. If a customers ask you is Helena Rubinstein Pasteurized Face Cream an emulsified face cream, what would be your answer? A. Our answer would be we don't switch merchandise. The girls who work on the line don't say one is better than the other. They ask a customer what she wants and that is what she gets.

Q. In other words, you couldn't answer that question? A. I couldn't answer it? I didn't understand it maybe.

Q. I asked the question: Suppose a customer asked you, is Pasteurized Face Cream in the jar sold by Helena Rubinstein an emulsified face cream? A. I would an-

(23)

swer: No, it is not an emulsified face cream.

Q. I am going to ask a question which may sound similar to a question which was asked on direct examination, but I am going to do this primarily to sharpen the answer. If in your store you had before you on the counter the jar of Helena Rubinstein as shown in the picture that I showed you, with both the name Helena Rubinstein and the terminology "Pasteurized Face Cream" on it, and at another point on the counter you had a jar which had on it only the term "Pasteurized Face Cream" and not the term Helena Rubinstein, and a regular customer came in and wanted to buy Pasteurized Face Cream, which of those two jars or products do you think they would buy? A. Well, in the first place, I don't think we could have one on the counter not with Helena Rubinstein's name on it.

The Court: Supposing you had?

The Witness: I would immediately associate it with Helena Rubinstein; the word "Pasteurized".

By Mr. Roeming:

Q. My question was, which one would the customer buy? A. She would probably buy Pasteurized Helena Rubinstein Face Cream because there is no other one on the market that has the word "Pasteurized" on it.

(24)

Q. You are not accepting the proposition that I have made to you, that you have on one side of the counter the jar with the term "Pasteurized Face Cream" and the words "Helena Rubinstein" on it, and here on the other side of the counter—and this is hypothetical, as the question was put to you before—is a jar which has on it the words "Pasteurized Face Cream" but not the words "Helena Rubinstein". In your opinion, which would the customer buy? A. She would have to buy Helena Rubinstein, because, in my knowledge, there is no other one that has pasteurized cream on it.

Mr. Roeming: That is all I have.

The Court: Have you any redirect?

Mr. Sandground: Yes, Your Honor.

Re-direct Examination by Mr. Sandground:

Q. Ma'am, in your opinion, is "pasteurized" a name for a face cream by Helena Rubinstein or a form of the cream itself? A. In my opinion, it is the name for Helena Rubinstein's Pasteurized Face Cream and that is all.

Mr. Sandground: Thank you.

No further questions.

(25)

The Court: Have you anything further?
Mr. Roeming: No, Your Honor.
The Court: Have you any further witnesses?
Mr. Sandground: I would like to at this time offer in evidence the depositions. I am through with this witness.
The Court: You may step down.
The Court: Have you any objection to that deposition?
Mr. Roeming: No, Your Honor.
The Court: Very well, it may be marked in evidence.

(Plaintiff's Exhibit No. 1 was received in evidence.)

The Court: This deposition is called the original correction?
Mr. Sandground: Yes, Your Honor.
I would also like to offer into evidence a certified copy of the action by the Board below.
The Court: Where is it?
Mr. Sandground: I have submitted it to the Court, Your Honor, at the time of the trial brief.

The Court: I haven't got it. I have nothing here to indicate what happened below. All I have is the jacket for the complaint, the answer and the original of this and the corrected copy.

(26)

Mr. Sandground: I filed it in this Court with the plaintiff's trial brief, Your Honor.

The Court: Well, I never received it. You have that, however, in your exhibit, haven't you?

Mr. Roeming: I have only the decisions that are pertinent. I don't have the whole application, which is usually put in by the plaintiff.

The Court: Well, it must be inside. I will get it anyhow.

Mr. Sandground: I take it there is no objection?

Mr. Roeming: No, indeed, we insist on it.

The Court: It must be introduced.

You may produce yours out of order.

Mr. Roeming: At this time I introduce defendant's exhibit 5, copies of decisions of the Examiner and the Trademark Board of Appeals.

The Court: It may be marked in evidence.

The Deputy Clerk: Defendant's Exhibit Number 5.

(Defendant's Exhibit No. 5 was received in evidence.)

Mr. Sandground: We have no objection to it.

We would like to offer, if it please the Court, two additional exhibits, certified photo copies of the Trademark Registration 375501 and 210650, one for the word

Discussion

(27)

"Pasteurized" and the other for the words "Pasteurized Cream".

Mr. Roeming: No objection, Your Honor.

The Court: Very well.

The Deputy Clerk: Plaintiff's Exhibits 2 and 3 received in evidence.

(Plaintiff's Exhibits No's 2 and 3 were received in evidence.)

The Court: You received the certified copy, did you not?

Mr. Sandground: Yes, Your Honor. I filed it.

The Court: It must be here. It will be considered as marked in evidence when I get ahold of it. It is customary to do it and there is no objection on the part of the Government counsel.

Mr. Sandground: With that the plaintiff rests.

The Court: Have you anything further?

Mr. Roeming: No, Your Honor.

The Court: Very well, I would like to hear some argument.

* * * * *

(39)

The Court: I have to revert to what I said during the course of this trial, and that is that there is a great

(40)

distinction between the use of a trademark and the registration of a trademark.

There is nothing to prevent the plaintiff here from using that mark. But when it comes to the matter of registration, the decisions of the Patent Office must be viewed as being strong enough so that in order to overturn them by a judgment of this Court there must be clear error. The Court is unable to find clear error on the part of the Patent Office and, therefore, finds for the defendant and against the plaintiff.

The Court requests proposed findings of fact and conclusions of law, Mr. Roeming.

Court now stands in recess until return of Court.

(Whereupon, at 11:00 a. m. the trial of Civil Action No. 3332-61, Helena Rubinstein, Inc., v. David L. Ladd, Commissioner of Patents, was concluded.)

Plaintiff's Exhibit 1

Deposition Taken in New York, April 10, 1963

UNITED STATES DISTRICT COURT

For the District of Columbia

Civil Division

C. A. No. 3332—61

———o———

[SAME TITLE]

———o———

April 10, 1963
At 10:00 A. M.
At 655 Fifth Avenue
New York, New York

Depositions of Justin Deal, Cecelia Esposito, Angela Monti, Bluma Mushlin, Roslyn Steinberg, Thelma Cole, taken before me, Rose Irwin, a Notary Public, in and for the State of New York, at 655 Fifth Avenue, New York, New York on the 10th day of April, 1963 pursuant to notice.

Appearances:

Mark B. Sandground, Esq., Attorney for the Plaintiff, 944 Washington Building, Washington 5, D. C.
and

Edmund M. Squire, Esq., of Counsel, 50 Church Street, New York 7, New York.

Mr. George C. Roeming, Esq., For the United States Patent Office, United States Patent Office, Washington, D. C.

Plaintiff's Exhibit 1

Mr. Roeming: I will not make any objection—any formal objection to any testimony based on hearsay or any other reason because we are going to trial without a jury, and if we were in the courtroom in Washington, the district judge would not sustain the objection on the ground that in the absence of a jury he will evaluate the evidence for whatever it is worth.

Mr. Sandground: I have a statement for the record. On the 10th day of April, 1963 certain depositions are being taken in this cause by formal notice filed timely, and by stipulation that the depositions can be taken in New York and used according to the Federal Rules of Civil Procedure as testimony in the cause without regard to the fact that the case is already on the ready calendar and set for trial on a date certain.

Justin Deal, being first duly sworn by a notary public of the State of New York to testify the truth, the whole truth and nothing but the truth, testified as follows:

Direct Examination by Mr. Squire:

Q. What is your occupation? A. Chemist.

Q. By whom are you employed? A. Helena Rubinstein.

Q. What is your chemical education and experience? A. Bachelor's Degree in Pharmacy and Chemistry. I first started around 1929, 1930 at what was full time employment as student-instructor. About 1931 in various capacities, and mostly pharmaceutical industrial, Lederle and cosmetics.

Plaintiff's Exhibit 1

Q. Are you familiar with the product made by Helena Rubinstein known as "Pasteurized" face cream? A. Yes, sir.

Q. Is this product, in fact, pasteurized? A. No, sir.

Mr. Squire: That's all.

Direct Examination by Mr. Sandground:

Q. Sir, does the term "Pasteurized" have a scientific meaning to you as a Chemist? A. As a Chemist, pasteurization is not directly related to my work, it's for bacteriology. But in order to inform myself on this particular case, I inquired as to what pasteurization was, mostly by referring specifically to several textbooks and so forth and dictionaries that I investigated. Simply, it consists of heating to an elevated temperature and cooling, to eliminate bacteria in the media.

Q. Now sir, that I take it is the standard accepted definition of the process pasteurization, in your opinion? A. As well as I could find out from reference works and textbooks, yes.

Q. And directing your attention to a product known as "pasteurized" face cream, are you familiar with this product? A. Yes.

Q. This is a product made by Helena Rubinstein, Inc. Corporation? A. Yes.

Q. Now, with direct reference to this specific product, is this product pasteurized, as you have explained by your definition? A. No, there is no objective to pasteurizing the cream.

Mr. Sandground: That's all at the moment, thank you.

Plaintiff's Exhibit 1

Cross-Examination by Mr. Roeming:

Q. Now, in the course of making this cream is this mixture of ingredients at any time heated up to 130 or 150 degrees Fahrenheit? A. Yes.

Q. And when it is so heated, for what length of time would it be heated to such a temperature? A. It would probably remain at that temperature for at least half an hour.

Q. What is your present activity. I probably misunderstood something. Are you a consulting chemist? A. No, sir. I'm a product development chemist employed by the Company.

Mr. Roeming: Thank you.

Re-direct Examination by Mr. Sandground:

Q. You've testified that the cream is heated to 130 degrees. What is the reason that "Pasteurized" face cream is heated in the manufacturing process? A. It's heated as part of the routine procedure in producing the creams for the purpose of emulsifying the ingredients.

Q. Is it true of other creams? A. The majority of creams are so made.

Q. When you say emulsifying the ingredients, does that make it smoother and break down the fats? A. Yes.

Q. And would you say in your experience as a chemist that in the heating of face creams it is fairly standard procedure to emulsify the fats? A. Yes.

Q. This is not something that Helena Rubinstein does just with "Pasteurized" face cream, is it? A. No, sir.

Q. Other than Helena Rubinstein face creams are also heated, is that correct? A. Yes, sir.

Q. For the purpose of emulsifying the fats? A. Yes.

Q. There's no particular significance to the degree it's heated and the time with reference to the particular face cream, is there? A. No.

Mr. Sandground: That's all. Just for the record, would you state your address?

The Witness: 21 Eldredge Place, Glen Cove, Long Island, New York.

Mr. Sandground: Thank you.

(The witness is excused.)

Cecelia M. Esposito, having been duly sworn by a notary public of the State of New York, testified as follows:

Mr. Sandground: Question for the record, is it Miss or Mrs.?

The Witness: Miss.

Direct Examination by Mr. Sandground:

Q. Where do you reside? A. 1044 77th Street.

Q. By whom are you employed? A. Helena Rubinstein, Inc.

Q. What is the nature of your employment? A. I am Resident Attorney for Helena Rubinstein.

Q. Do you have a law degree? A. Yes, I do.

Q. Where did you get your law degree and when? A. St. John's in 1953.

Q. Are you admitted to the Bar in the State of New York? A. Yes.

Q. Now in your position as house counsel for Helena Rubinstein, do you know whether legal records and other records relating to matters of Helena Rubinstein are kept in the ordinary course of business? A. Yes, I do.

Q. And they are kept in the ordinary course of business, is that correct? A. Yes. They are kept in the ordinary course of business.

Q. And as Counsel for Helena Rubinstein, are you generally familiar with the product line of your employer? A. Yes, I am.

Q. Now, directing your attention to the product "Pasteurized" face cream, are you familiar with this product, Miss Esposito? A. Yes, I am.

Q. Can you tell us for what period of time Helena Rubinstein has manufactured and/or sold this product on the market? A. Approximately 1925. It was one of Madam Rubinstein's first products.

Q. And is it sold today as a product of Helena Rubinstein, Inc.? A. Yes, it is.

Q. And has it been sold continuously since its origin? A. Yes, it has been sold continuously since approximately 1925, I guess.

Q. Now, can you tell us geographically where it is sold in the United States? A. The product is sold in the forty-eight, I'm sorry, in the fifty states and it's sold in Central and South America.

Q. Is the product carried in the regular line of Helena Rubinstein products? A. Yes, it's part of our regular line.

Q. And has it been advertised as the regular line of products? A. Yes, advertised as a regular item.

Q. Now, I direct your attention to a document marked Helena Rubinstein, Inc. Order Blank. Is that a current order blank for Helena Rubinstein? A. Yes, this is the newest order blank.

Q. And does that order blank carry the product "Pasteurized" face cream? A. Yes, it carries the full pasteurized line that we have today.

Q. Now, can you tell us in the question of volume, do you measure your volume in terms of units sold of the cream? A. Yes, we do.

Q. And are these records kept as to the volume of records in the ordinary course of business? A. Yes, they are.

Q. Can you tell us on those records, about the volume of units of "Pasteurized" face cream? A. Well——

Q. For the period of the last ten years, can you tell the units that have been sold of "Pasteurized" face cream? A. In 1949-1950 there were 641,615 units sold. In 1950-51 there were 842,538 units sold. In 1951-52 there were 990,103 units sold. In 1952-53 there were 889,155 units sold. In 1953-54 there were 654,972 units sold. In 1954-55 there were 674,984 units sold. In 1955-56 there were 856,656 units sold. In 1956-57 there were 370,192 units sold. In 1957-58 there were 346,414 units. In 1958-59 there were 328,872 units sold. This is the United States.

Q. Were additional units sold in Central and South America? A. Yes.

Q. And are Helena Rubinstein products sold in drug stores and cosmetic stores and department stores all over the United States? A. Yes, they are. I'd like to clarify that. Although these figures are only up to 1959 the product has been sold continuously but I don't have those figures available.

Plaintiff's Exhibit 1

Q. Now, can you tell us your own knowledge, approximately how many thousand outlets Helena Rubinstein has in the United States? Approximately how many you have? A. Well, I would be guessing. There are thousands. I would be guessing.

> Mr. Squire: Would you say that approximately all the major drug stores are an outlet?
>
> The Witness: Yes, all major drug stores, all department stores and of course smaller drug stores in every city and every town. We're represented in every major drug store, or large department store, or small department store.

Q. And to your knowledge, does the name Helena Rubinstein indicate to the public a most prominent cosmetic and beauty aid firm through the United States? A. Yes.

Q. Now, are you generally familiar in your work with products made by other manufacturers, competitors? A. Yes.

Q. To your knowledge, within the past ten years, has anyone ever manufactured or sold a face cream calling it "Pasteurized" face cream, outside of Helena Rubinstein? A. I know of no other cream called "Pasteurized" face cream.

Q. Now, in your position as Counsel, do you consider that the word "Pasteurized" face cream indicates to your Company a special product belonging to Helena Rubinstein and manufactured and sold by Helena Rubinstein? A. Yes.

Q. And does your Company, and do you, associate the term "Pasteurized" face cream solely and exclusively with Helena Rubinstein? A. Yes.

Plaintiff's Exhibit 1

Q. And does this term "Pasteurized" face cream indicate origin of the goods with Helena Rubinstein? A. Yes.

Q. Now, directing your attention to the use of the quotation marks around the word "Pasteurized", these are put in specifically in your label, is that correct? A. That's true.

Q. Is this done to indicate that the product is in fact scientifically pasteurized? A. Does that indicate that the product is in fact scientifically pasteurized? No, it is done to indicate that it is a name that we have for our cream, a trade name for cream.

Q. Now directing your attention to the use of the quotation marks, do you know the significance from your legal files of the placing of the quotation marks around the word "Pasteurized"? Can you tell us in your own words? A. Yes. From the records, apparently about 1945 there was some question as to the use of the quotation marks around the name.

Q. From the record, you mean the legal files and the records kept in the ordinary course of business? A. Yes. And these records indicate that we were requested by the Federal Trade Commission to keep these quotation marks around the name because it is a name and because the product is not, in fact pasteurized.

Q. And as policy of the Company, are you using the quotation marks "Pasteurized" to indicate to the public that this is a name and not a descriptive term? A. Yes.

Q. Did you place quotation marks around the word "Pasteurized" solely for the purpose of emphasizing the word "Pasteurized"? A. Solely?

Q. Yes. A. Not solely.

Q. And to your knowledge, do the general purchasers of your product recognize the term "Pasteurized" as a specific Helena Rubinstein product? A. Yes.

Mr. Sandground: Thank you.

Cross-Examination by Mr. Roeming:

Q. In relation to the remarks you made previously concerning the Federal Trade Commission, were there any formal holding by the Federal Trade Commission that your cream was not pasteurized? A. Not that I know of. But you know—not that I know of.

Mr. Squire: You mean of your own personal knowledge.

The Witness: Not that I know of, it was done on an informal basis.

Mr. Roeming: I have no other questions for the moment.

Re-direct Examination by Mr. Squire:

Q. To the best of your knowledge was this informal action taken to avoid formal action? A. Yes, that would be the reason for the action.

Q. And was the use of the word "Pasteurized" considered to be misdescriptive or misleading without proper quotation marks? A. There was a question of the name being misleading without the quotation marks, and to this day we continue to use the quotation marks to avoid any question of misdescription with the trade mark.

Plaintiff's Exhibit 1

Mr. Sandground: I'd like to place another stipulation on the record. It is hereby agreed and stipulated between government Counsel and Counsel for the Plaintiff that there is no objection to both Counsel for Helena Rubinstein questioning the witness.

Mr. Roeming: Agreed.

Re-cross Examination by Mr. Roeming:

Q. This matter that you speak of is before your time and is not of your personal knowledge, but you base your statements on the papers in your files, is that correct? A. That is true. My own action in connection with the question and with the quotation marks would be guided by what is in the files.

(Discussion off the record)

Mr. Sandground: I should like to put in evidence the following: Plaintiff's Exhibit 1-A is a carbon copy of a document dated February 10, 1947 to Miss C. A. Burke written by Louis A. Stone. Plaintiff's Exhibit 1-B is a Helena Rubinstein, Inc. inter-office correspondence memorandum dated June 7, 1946 to Mr. Louis A. Sternberg from C. V. Fawns. Plaintiff's Exhibit 1-C is a Helena Rubinstein, Inc. inter-office memorandum dated June 3, 1946 to File-Labeling, from Louis A. Sternberg. Plaintiff's Exhibit 1-D is another Helena Rubinstein, Inc. inter-office correspondence memorandum to Louis A. Sternberg, Esq., from C. V. Fawns dated May 1, 1946. Plaintiff's Exhibit 1-E is another Helena Rubinstein, Inc. inter-office correspondence memorandum dated May 1, 1946 to Mr. L. Medgyes from Mr. Louis A. Sternberg. Plaintiff's Exhibit 1-F is another Helena Rubinstein, Inc. inter-office correspondence memorandum dated April 30, 1946 to Mr. L. Medgyes from Mr. C. V. Fawns. Plaintiff's Exhibit 1-G is a carbon copy of a letter from the law firm of Sherman and Goldring dated March 4, 1946 the address being 51 Madison Avenue, New York 10, New York, written by R. Kramer to Mr. L. Medgyes at Helena Rubinstein, Inc. with a copy enclosed to Mr. Sternberg. Plaintiff's Exhibit 1-H is a carbon copy of a memorandum file to Madam Rubinstein, Mr. Sternberg, Miss Randolph originally addressed to Mr. Sherman dated February 28, 1946. Plaintiff's Exhibit 1-I is a Helena Rubinstein, Inc. inter-office memorandum dated December 17, 1946 to Mr. Ladislas Medgyes from Louis A. Sternberg with a copy to Miss C. A. Burke.

(The above identified Exhibits 1-A through 1-I, received and marked in Evidence.)

Mr. Sandground: I wish it to be noted that these were offered in Evidence and admitted without objection.

Re-cross Examination by Mr. Roeming:

Q. At the trial I will enter this particular physical exhibit as Defendant's Exhibit 1. It's a container having a designation on it "Herbessence Body Smooth", and "Helena Rubinstein" that's on the one face, do you recognize that as one of your products? A. Yes, I do.

Plaintiff's Exhibit 1

Q. Now, I call your attention to the fact that the front face of "Herbessence" there is an asterisk on it. The word "Herb" as an "R" in a circle on the back of the word "Body Smooth" there was an asterisk, and at the bottom of that phrase is the asterisk, and there is an additional asterisk. In view of that, would you explain what that is, as to the meaning to the public? A. The asterisk is our claim that the names that are asterisked are trade marks for us. Until we are able to register them, it's an interim protection.

Q. Now, on the containers for the product of "Pasteurized" face cream, I don't have a copy there but I do have a photograph of the product which is one of the specimens in the application. Now, on that container you have the word "Pasteurized" face cream, but there is no asterisk and there is no indication anywhere on that container that such an asterisk would mean trade mark. In view of that which you said, there is no claim for the trade mark on it and the word "Pasteurized" on that container, that's the reason I bought this. Can you give me any explanation of why you don't have the asterisk or the indication that this is a trade mark? A. Yes. Under our old registration we were using an "R". When our registration expired and we found that we were having difficulty getting a new trade mark and we were shocked, we didn't use the "R" for fear of violating. We removed the "R" in a circle. We were so sure that it was our trade mark that we didn't use the asterisk. We removed the R because we didn't want to violate. We didn't have a new registration but we were so positive that it was our trade mark that we just didn't put another dot on there, another asterisk. There are artistic reasons to consider as well—you have the quotation marks and then another asterisk after the quotation marks making the label a little bit of a hodge podge from the point of view of our art people. So we have to consider each package on its own and we have to consider the appearance of a package as well as the trade mark situation. An asterisk after those quotation marks would be a little bit cumbersome in the opinion of our art people.

Q. Did you handle the trade mark matters for the Company? A. Yes.

Q. And you consider yourself an experienced trade mark attorney? A. When you are resident attorney of a company——

Q. Let me put it another way. Do you handle the trade mark matters without the advice of other trade mark counsel? A. No, I act on my own in some areas and on the advice of trade mark counsel in other areas.

Q. Is Mr. Squire your trade mark counsel? A. He's Trade Mark Counsel for us, yes.

Q. Are you aware of the fact that you can be the owner of a trade mark at common law in spite of the fact that it isn't registered? A. Oh yes. I'm aware that we can be the owners without asterisking our trade mark too. That's why I was so sure that in this connection with "Pasteurized" I was safe, just on its own.

Mr. Roeming: That's all.

Re-direct Examination by Mr. Sandground:

Q. Miss Esposito, wasn't one of the reasons that presently the Helena Rubinstein label "Pasteurized" is not asterisked or marked with an asterisk is, because in your opinion, it had been already registered before that action. There was no question as to its registration and you felt that it was a foregone conclusion? A. There was no question to our ownership in this trade mark at all.

Plaintiff's Exhibit 1

If we have a trade mark in anything, we have it in "Pasteurized", in my opinion.

Mr. Sandground: That's it.

Re-cross Examination by Mr. Roeming:

Q. You are of course aware of the fact that your registration was under the 1920 Act? A. Yes.

Q. Which would be the equivalent of a supplemental register? A. Well I don't know if that's an equivalent.

Mr. Sandground: That calls for a legal conclusion as a matter of law.

Mr. Roeming: I'll withdraw the question and state it another way.

Q. You are aware of the fact that the "R" with a circle around it referred to the 1920 Act registration? A. Yes, the original registration.

(Discussion off the record)

Q. In other words, the only registration for "Pasteurized" in connection with facial creams, was a registration under the Act of 1920? A. Yes.

Q. And may I then ask this. When did you stop using the designation "R" on "Pasteurized"? A. Can I give you an approximate year? When we started to run into a little trouble with the application would be in '59 or '60, but by the time it's actually taken off. The merchandise instructions were given in 1959 or 1960.

Mr. Roeming: Thank you.

(Witness exused)

Plaintiff's Exhibit 1

Angela Monti, being duly sworn by a notary public of the State of New York, testified as follows:

Direct Examination by Mr. Sandground:

Q. Will you state your name and address? A. Angela Monti, 240 East 75th Street, New York.

Q. By whom are you employed? A. Cromwell Pharmacy, 666 Fifth Avenue.

Q. Is that also New York City? A. Yes, it is.

Q. Now, Madam, have you had experience in the sale of cosmetics? A. Yes.

Q. What is your position with Cromwell Pharmacy? A. I would say cosmetician and buyer.

Q. How many years experience have you had in the sale of cosmetics? A. About seventeen.

Q. And has it been with other firms beside the one you are with? A. Yes.

Q. And has it been generally in the New York area? A. Yes.

Q. The firm you're with now, is this a drug store? A. Yes, sir.

Q. Would you say that it's a busy drug store? A. Oh yes.

Q. Do you carry as a part of your sales line and your merchandise, beauty products and cosmetics manufactured by Helena Rubinstein? A. Yes.

Q. And do you carry cosmetics made by other companies? A. Yes.

Q. A general line of competitive products? Both? A. Yes.

Q. And do you have a rather big stock of these? A. Quite big.

Plaintiff's Exhibit 1

Q. Now directing your attention to a product known as "Pasteurized" face cream, have you heard of this product? A. Yes.

Q. For how many years have you been familiar with this product? A. As long as I can remember, I think about ten or fifteen years.

Q. Ten or fifteen years? A. About that.

Q. Have you sold this product yourself? A. Yes.

Q. Would you say in the past ten or fifteen years that you've sold quite a bit of this product? A. Yes.

Q. Now, you're not an employee of Helena Rubinstein, are you? A. No.

Q. And you have no interest financially in Helena Rubinstein products, do you? A. No, I sell them and that's an interest.

Q. I mean in the products themselves? A. No.

Q. And you don't receive any compensation from Helena Rubinstein for selling her products directly? A. Yes, I do.

Q. You do? A. Yes.

Q. Would you tell us— A. I work on a commission basis.

Q. On a commission basis? A. Yes.

Q. And you have the same financial interest with the other companies you mentioned you sell? A. Yes.

Q. Nothing particular that would make you want to push Helena Rubinstein products over any other products? Someone comes in and wants to buy something, you sell them what they want? A. Yes, and recommendations.

Q. Now, directing your attention to the product known as "Pasteurized" face cream, what does this product indicate to you, what does this mean to you? A. Well, it's a pasteurized cream.

Plaintiff's Exhibit 1

Q. Is it associated with any one company? A. Just Rubinstein.

Q. When you mean a pasteurized cream, do you mean that you sell the cream as actually being pasteurized? A. I don't get that impression.

Q. But you don't know whether its in fact physically pasteurized? A. No.

Q. It doesn't really make any difference, does it? A. No.

Q. When people come in and ask you for a pasteurized cream, does this lead you to anyone particular product? A. Yes.

Q. What? A. The Rubinstein product.

Q. Why? A. Because they're the only ones with that name.

Q. What's the primary association with the term "Pasteurized" cream mean to you from the point of manufacture? A. Well, it's probably made from a milk base.

Q. I think you misunderstood my question. Who makes it? When someone comes in and just asks you for a pasteurized cream, what do you get? A. Rubinstein.

Q. Do you think there is anyone else? A. No, no one else.

Q. Now, when a purchaser comes in and asks you for a pasteurized cream, can you tell us generally what you think? What is in your mind when they ask for this cream, as to the question of who makes it? A. Well, if they come in and ask for pasteurized cream, they know.

Mr. Roeming: Excuse me?

Mr. Sandground: We'll just strike that question.

Plaintiff's Exhibit 1

Q. Now, in your opinion, when someone comes in and asks for pasteurized cream, is this a recognition by them of a particular product made by Rubinstein? A. Yes.

Q. What leads you to this opinion? A. Because if it doesn't have that word on it, I don't think you could sell it. They want that particular word on it, "Pasteurized".

Q. Does this mean it comes from Helena Rubinstein? A. Yes.

Q. And is this important to your customers in the sale of cosmetics, the manufacturer, the reputation of the manufacturer? A. Yes, it is.

Q. And in your opinion, do people buy pasteurized cream from you with the knowledge that it is made by the firm of Helena Rubinstein? A. Yes.

Q. Would you say that many people come in during the year and ask for this product? Is it popular? A. Very popular.

Q. Would you say it is extensively sold? A. Yes it is.

Q. Do you also act as a buyer of cosmetics? A. Yes.

Q. You do? A. Yes.

Q. And when you buy pasteurized cream, what does it make you immediately think of in terms of the manufacturer? A. When I buy for the store?

Q. Yes, when you buy for the store. Who do you think of to buy it from? A. Helena Rubinstein.

Q. Why? A. As I said before, they're the only ones with that name. There is no other cream on the market like it.

Q. And do you associate the term "Pasteurized" face cream solely and exclusively with Helena Rubinstein? A. Definitely, yes.

Plaintiff's Exhibit 1

Q. And do you think your customers associate the name "Pasteurized" cream solely with Helena Rubinstein? A. Yes, I do.

Mr. Sandground: No further questions. You may examine.

Cross-Examination by Mr. Roeming:

Q. How many face creams of Helena Rubinstein, Inc. are you familiar with? A. How many creams?

Q. Yes. A. Their whole line.

Q. How many would you estimate they have? A. Just for face creams? Is that including all the "Herbessence", the whole line of foundations, because there's quite a few.

Q. I'm not an expert in the matter, I'm just thinking of the type of thing that would be simply designated a face cream. A. How many? At least ten, twelve a dozen.

Q. Could you give me some other designation as for instance of how they are designated as a product? A. Well, one is more or less a moisture cream, one is called a balm, an emulsion, a cleanser, a night cream.

Q. For instance, people come in and they'll ask for a night cream, if I'm not mistaken, the word "Pasteurized" is used with night cream too, isn't it? A. Yes.

Q. Is it used as a cleanser cream? A. Yes, it is.

Q. Now, when people ask for this cream, for instance "Pasteurized" cream, these things are visible on the counter aren't they? A. Yes.

Q. Do customers ask for a "Pasteurized" face cream without ever using the designation Helena Rubinstein? A. Yes, many times.

Q. Now, Rubinstein also has one called a medicated cream, is that right? A. Yes.

Plaintiff's Exhibit 1

Q. Does anybody else sell a medicated cream? A. Yes, quite a few other lines do.

Q. How about emulsified cream? A. Yes, a lot of other lines.

Q. Does Helena Rubinstein use the term "Emulsified"? A. Oh, yes. In one of her creams. I think they're more interested in the title, more what's in the cream. They seldom asked whether its pasteurized, they just come in and go by the name.

Q. What name is that? A. For instance, if they want a moisture cream they'll use the word moisture, if they want a pasteurized they just ask for pasteurized, or balm. More or less the title of the cream, not what it consists of.

Q. As a person familiar with this trade of cosmetics what distinctions do you understand, for instance, between a face cream and a pasteurized cream. What is the difference between these creams to you? A. Well, one is more heavier cream and a base is lighter in texture, that's the only difference.

Q. How about an emulsified cream? A. It's a lighter weight and it's a richer cream.

Q. There are certain names of the cosmetic industry which have a prestige well above that of other manufacturers. Would you consider the name Rubinstein as high prestige in the cosmetics industry? A. Yes.

Q. Are their products expensive? A. I'd say medium.

Q. How about Elizabeth Arden? A. Well some of her creams are a little more but on the other hand, Rubinstein has a more prestige line like "The Tree of Life" and that corresponds with some of Arden's more expensive creams.

Plaintiff's Exhibit 1

Q. What is the range of prices of the Rubinstein products of this nature? A. Oh, two or three dollars a jar.

Q. And when you say this is a medium priced prestige range rather, how high do the high prestige products run in value? A. Twenty-five dollars a jar.

Q. Now, there was also the low prestige. What would be the price of let's say a low prestige face cream? A. A dollar, fifty-nine cents.

Q. What's the price, the retail price of "Pasteurized" face cream? A. A dollar fifty and two twenty-five.

Q. A container here—I have a container here of "Herbessence Body Smooth", and I paid two seventy-five for it and I found that this was one of the cheapest Rubinstein products I could find. I didn't want to spend a lot of money. Let me ask you this question. Do you suppose that if you had on your counter a container with the mark "Pasteurized" facial cream at a price of a dollar and a half but not the name Rubinstein on it, and you had another container namely the Rubinstein standard container of "Pasteurized" facial cream with the name Helena Rubinstein on it, and it also was a dollar and a half, is it your opinion that the average purchaser would be content if you gave her the jar without the Helena Rubinstein name on it, in reference to the one that had the Rubinstein name on it? A. Well, I think one of the first questions would be "Well, who makes it?" Putting a cream out with a name on it without a manufacturer, I think the customer would want to know who manufactures it.

Mr. Roeming: That's all.

Re-direct Examination by Sandground:

Q. You mentioned that sometimes people come in and ask for a pasteurized cream without mentioning Rubinstein? A. Yes.

Q. Does this immediately call your attention, do you tell them Rubinstein "Pasteurized" cream? A. Yes, because there's a lot of other lines that have a certain cream called blemish cream.

Q. When somebody comes in and asks you for a "Pasteurized" cream, the only one you would sell them would be the Helena Rubenstein cream? A. Yes.

Q. What's what they're asking for when they just come in for a "Pasteurized" cream? A. Right.

Q. And in your general experience, the prestige of a manufacturer of cosmetics is only equal or more important than what's in the actual jar, isn't it? A. Yes.

Q. Would you? A. Yes, I think so.

Mr. Sandground: No further questions.

(Witness excused)

Thelma Cole, having been duly sworn by a notary public of the State of New York, was examined and testified as follows:

Direct Examination by Mr. Sandground:

Q. Will you state your name and address. A. Thelma Cole, 400 West 58th Street.

Q. Is it Miss? A. Yes.

Q. Is that in New York City? A. Yes. New York 19.

Plaintiff's Exhibit 1

Q. By whom are you employed? A. I am self-employed at this time.

Q. What is the nature of your profession? A. Cosmetic industry.

Q. Cosmetic industry? A. Yes.

Q. How long have you been associated with the cosmetic industry? A. Eighteen years.

Q. During part of that time have you had the experience of selling cosmetics? A. Yes, I have.

Q. And during part of that time have you dealt with the public in the sale of cosmetics over the counters? A. Yes.

Q. And are you generally familiar with the competitive cosmetic lines in the United States? A. Yes.

Q. Are you familiar with the Helena Rubinstein cosmetic lines? A. Yes, I am.

Q. Are you familiar with other lines of American cosmetics? A. Quite familiar with them.

Q. And now, are you employed by Helena Rubinstein or do you have any financial interest in the operation of Helena Rubinstein, Inc.? A. No.

Q. Directing your attention to a product known as "Pasteurized" face cream. Are you familiar with this product? A. Yes.

Q. How long have you been familiar with it? A. Since I have been in the industry?

Q. For eighteen years? A. Yes.

Q. Would you say this is a popular product in the industry? A. Extremely so.

Q. And have you had the opportunity over the years to sell "Pasteurized" facial cream? A. Yes.

Q. Would you say over the past eighteen years you've sold quite a bit of it? A. Yes.

Plaintiff's Exhibit 1

Q. Now, directing your attention to this product, in your opinion, when you became acquainted with it right up to the present time, did you think it was really "Pasteurized" meaning the scientific process of purification? A. Never entered my mind.

Q. What does the term "Pasteurized" facial cream mean to you. Does it designate—what does it designate? A. The name of the cream.

Q. How do you associate this cream with Helena Rubinstein? A. (No response).

Q. Do you associate it with anybody else? A. No.

Q. Why not? A. I don't believe anyone else uses that name?

Q. To your knowledge, is this the only cosmetic cream that's known as "Pasteurized" face cream? A. Yes, it is.

Q. Now, have you had opportunity to have people come in to you to buy pasteurized cream, products over the counter? A. Many times.

Q. When they come in what do they ask you for generally? A. Pasteurized face cream or Helena Rubinstein "Pasteurized" face cream.

Q. And when someone comes in and just asks for "Pasteurized" face cream, what do you give them? A. I automatically go to the Helena Rubinstein shelf.

Q. Why do you automatically do this? A. The word "Pasteurized" face cream means Helena Rubinstein.

Q. And do you think that is universally true that there is this recognition by the purchasers— A. I believe so.

Q. And from your experience, when someone buys "Pasteurized" face cream, is Helena Rubinstein in their mind? A. Yes.

Q. During the time of your experience in cosmetics, can you tell us whether you feel that the manufacturer of a cosmetic by his reputation or prestige plays any part in the sales of this product? A. Definitely so.

Q. And do people who come in to buy cream cosmetics have in their mind certain specific favorite manufacturers? A. Yes.

Q. Is this, to your knowledge and experience, general throughout the industry? A. Yes.

Q. Let me ask you this hypothetical question. In your experience and you can only answer from your experience, you take a jar of Helena Rubinstein "Pasteurized" face cream on the counter and you put it next to an ordinary jar just with the word "Pasteurized" and someone comes in, would they make a distinction between the Helena Rubinstein product in their buying preference? A. Yes, because that's the jar and the name that they know.

Q. And why would they make that distinction as to the manufacturer? A. This is the cream they use, this is the manufacturer that they have seen advertised.

Mr. Roeming: Could I interrupt?

(Discussion off the record.)

Q. Now, Rubinstein has more than just one type of a cream, don't they? A. They have many.

Q. They have many? A. Yes.

Q. Is the term "Pasteurized" also used with a night cream? A. A night cream and a cleanser cream.

Q. And on these products when someone comes in and asks for a "Pasteurized" night cream or cleansing cream, in your experience, do they want it because they might think it's a pasteurized cream or do they want it because it's a Helena Rubinstein product? A. I believe because it's a Helena Rubinstein product.

Plaintiff's Exhibit 1

Q. What leads you to believe that? A. The question has never come up in my own experience.

Q. Never has come up at all? A. No.

Q. Anyone ever come in to you and say, "I want a face cream which is pasteurized"? A. Never that I can remember.

Q. When people come in and ask for a "Pasteurized" face cream, what do you do? A. I go to the Helena Rubinstein product.

Q. Now, you testified as to your purchases. Do you also have experience in selling creams to other stores and wholesalers? A. Yes.

Q. Now, about the trade in the stores and the wholesalers, do they also have knowledge of "Pasteurized" face cream? A. Yes, it is quite well known.

Q. What does it specifically refer to for the people that buy cosmetics for resale? A. Helena Rubinstein.

Q. And in your opinion, has the word "Pasteurized" face cream taken on a secondary meaning to mean a Helena Rubinstein product exclusively? A. Yes.

Q. What leads you to this opinion? A. Customers will come into the store and ask for a "Pasteurized" face cream and the first question you ask them is if it is the night cream or the cleansing cream.

Q. And they are generally familiar with this product? A. And they are familiar and they will tell you what they want, the night cream or the cleanser.

Q. Does this indicate to you a recognition by the purchasers of Helena Rubinstein products as always being synonymous with "Pasteurized" in cosmetics and creams? A. Yes.

Mr. Sandground: No further questions. You may examine.

Plaintiff's Exhibit 1

Cross-Examination by Mr. Roeming:

Q. Do you know what Mr. Sandground meant when he said "secondary meaning"? A. Yes.

Q. Would you explain that? A. If it meant that the cream was pasteurized or the product, within my own experience when a customer comes in asks for a "Pasteurized" face cream, she means Helena Rubinstein face cream. This has never arisen in my mind.

Mr. Roeming: Thank you.

Re-direct Examination by Mr. Sandground:

Q. May I explain your question. When you think of the word coke don't you automatically think of the word coca cola? A. Yes.

Q. So the word cola has a secondary meaning to you. The minute you think of coke and coca cola that's what I meant by secondary meaning.

(Discussion off the record)

Re-cross Examination by Mr. Roeming:

Q. You have never seen the product "Pasteurized" face cream in containers which did not have the Helena Rubinstein designation on it? A. Did I, no.

Q. In other words, you are not in a position to say even with your eighteen years experience with this product, with your familiarity with their packaging of it, what you or the public would do about a container which had the word "Pasteurized" face cream on it and not the name Helena Rubinstein? A. No, I've never come across it.

Mr. Roeming: That's all.

Re-direct Examination by Mr. Sandground:

Q. To your knowledge, there was no such animal as a container which just had "Pasteurized" on it? A. No. And I've worked in drug stores that carry all cosmetics and I've never seen it.

Q. Let's assume hypothetically there was a jar just called "Pasteurized" and side by side with a Helena Rubinstein "Pasteurized" face cream, is there any doubt in your mind that the public would be able to intelligently make a distinction based on their experience in the reputation of the product? A. It would immediately know it is Helen Rubinstein.

Q. Why? A. It's well known. This is the cream that they've been using. I found the American woman, when she uses the cream and she likes it and trusts it, she doesn't want to change.

Q. Would you also say, based upon your experience, upon the great variable, American woman, she does in her preference choose a well known cosmetic? A. Always.

Mr. Sandground: Thank you. That's all.

(Witness excused)

Plaintiff's Exhibit 1

Bluma Mushlin, having been duly sworn by a notary public of the State of New York was examined and testified as follows:

Direct Examination by Mr. Sandground:

Q. Where do you live? A. 615 West 186th Street.

Q. Is that in New York? A. Yes.

Q. Are you employed, Ma'am? A. Yes.

Q. By whom are you employed? A. Greenwald Drug, 1524 Second Avenue, New York.

Q. And is it part of your employment to sell cosmetics? A. Mostly cosmetics.

Q. Have you had experience in selling cosmetics? A. A. Oh yes, for a number of years.

Q. For how many years? A. I'm in this store for nine and one-half years.

Q. And before that? A. And before that I worked for the Liggett Company.

Q. Did you sell cosmetics there? A. Yes.

Q. And I take it you are generally familiar with all cosmetics sold in the United States? A. Yes, the lines we carry.

Q. Do you carry the Helena Rubinstein lines in the store where you work now? A. Yes.

Q. Directing your attention to a product known as "Pasteurized" face cream, are you familiar with that? A. Yes, very much.

Q. Very much? A. Yes.

Q. For how long have you known this face cream? A. For many years.

Q. Could you give us an approximate number of years? A. Maybe twenty years.

Plaintiff's Exhibit 1

Q. Now, have you sold this cream? A. Yes, I sell it right along.

Q. In your opinion, would you say it's a popular product in popular demand? A. It's a very popular product.

Q. Do a lot or do any people, come in and ask you for "Pasteurized" cream without mentioning the Helena Rubinstein name? A. Yes, they do.

Q. They do? A. Yes.

Q. And what do you do when this happens? A. I only know of one Rubinstein "Pasteurized" cream. I take that right out and that's the cream the customer wants.

Q. And they are satisfied with that? A. Yes.

Q. What do you primarily associate the word "Pasteurized" face cream with? A. Well it seem to me it's a sort of a purifying—I associate it with pasteurized milk. But of course, I know a cream can't be pasteurized, it's a trade mark of the pasteurized cream.

Q. During your experience in selling this cream did you ever have an opinion as to whether there was, or whether it was really pasteurized, like milk? A. No, I never gave that a thought. The only thing I know about pasteurized cream is that it was a trade mark for Helena Rubinstein creams.

Q. And when your people come in to you and ask for a cream either by the firm name or by "Pasteurized", what does this indicate to you, as to the origin of the manufacturer? A. Helena Rubinstein. It would mean Helena Rubinstein cream, only, that I know of.

Q. Was this the primary association of the name "Pasteurized"? A. Yes.

Q. And do the people, in your opinion, associate the cream itself with Helena Rubinstein rather than just with the product? A. Sometimes they would ask for Helena

Rubinstein, but most of the time they just come in and ask for a jar of "Pasteurized" cream.

Q. Now in your experience in cosmetics, do women have faith in certain cosmetic lines because of the manufacturer? A. Almost always.

Q. And do certain creams of certain manufacturers have prestige and popularity? A. Yes.

Q. Let me ask you a hypothetical question. Assume if you will, that you're working in a store and you have a jar of "Pasteurized" face cream made by Helena Rubinstein out there. Right next to it, just an ordinary jar or regular jar that looks like it, filled with a face cream and a plain label without manufacturers name with the words "Pasteurized Cream". Do you have any opinion as to which jar a women would buy? A. Well, it would be Rubinstein because it is so well known and I think it would also be Rubinstein if there was another jar next to it.

Q. And this is the recognition of the name "Pasteurized" associated directly and exclusively with Rubinstein? A. That's right.

Q. And in your experience, have you ever seen any other companies selling "Pasteurized" cream? A. No, I haven't.

Q. And you are generally familiar with all types of creams? A. Yes.

Q. Now, to your knowledge, there are "Pasteurized" face creams by Helena Rubinstein, there are also "Pasteurized" night creams. Does the same thing apply to both of those? A. That's right.

Q. In your opinion, or tell me what is your opinion about the significance of the word "Pasteurized" in the minds of the customers directly as concerned with the manufacturer? A. Well, I imagine they always think that it's just a trade mark. I don't think they associate it with anything else, as far as I know.

Q. In your knowledge from your experience, is the product widely known? A. It's very widely known. I think it's one of the first creams.

Mr. Sandground: I have no further questions.

Cross-Examination by Mr. Roeming:

Q. You are familiar with the emulsified creams? A. Yes.

Q. How would you define an emulsified cream, or distinguish an emulsified cream from the pasteurized cream? A. Well, the emulsified cream, the only way I could distinguish it is by the appearance of it. It is not as rich as the Rubinstein's cream. We have emulsified creams in the ordinary brands and the only way I could tell is by looking at it.

Q. Are you familar with the Rubinstein's medicated cream? A. Yes.

Q. That's sold at the present time? A. Yes.

Q. Does anybody else sell medicated cream? A. Oh yes a number of companies sell medicated cream. Most all of them.

Q. You were asked before, and I'm going to try to get these facts straight, if you had on your counter the present jar of Rubinstein "Pasteurized" face cream, and you also had on your counter a jar labeled "Pasteurized" face cream but did not have the name Helena Rubinstein on it, and if the prices were equal, do you think that people asking for "Pasteurized" face cream would be

Plaintiff's Exhibit 1

satisfied with the jar that does not have the Helena Rubinstein name on it? A. No, I don't think so because Rubinstein is so well known they go for that.

Mr. Roeming: That's all I have.

(Witness excused)

Mr. Sandground: I have a statement for the record. It is hereby stipulated that we will be allowed to take the depositions on the 10th day of April 1963 in the City of New York at approximately 1:46 P. M. of Mrs. Roslyn Steinberg and all the Counsel present hereby waive formal notice of the taking of this deposition and hereby waive the service of any subpoenas for the taking of depositions and agree by stipulation that testimony will be read in evidence subject to the rules of Federal Procedure and may be read in evidence subject to the rules of Civil Procedure just as if formal notice and service of process had been made in the regular form and order.

Mr. Roeming: So stipulated.

Roslyn Steinberg, having been duly sworn by a notary public of the State of New York, was examined and testified as follows:

Direct Examination by Mr. Sandground:

Q. Would you state your name? A. Mrs. Roslyn Steinberg, 10 East End Avenue, New York 21, New York.

Q. Mrs. Steinberg, are you a housewife? A. Yes.

Plaintiff's Exhibit 1

Q. And as a housewife do you have general familiarity with cosmetics? A. Yes.

Q. And during your experience, are you familiar with a specific face cream called "Pasteurized" face cream manufactured by Helena Rubinstein? A. Yes.

Q. Have you used this special cream yourself? A. Yes, I've used it for fifteen years I guess.

Q. And do you use it at the present time? A. Yes.

Q. Did you purchase this face cream? A. Yes.

Q. Where did you buy it? A. All over, wherever I have a charge, Bonwit's, Saks, Altman's, Lord and Taylor's, anywhere.

Q. From your experience and from your friends, do you think it's a pretty well known product? A. I think it is one of the first and one of the most important and popular products, yes.

Q. And when you purchase it, how do you ask for it? A. I just walk over to Helena Rubinstein and ask for "Pasteurized" cream, or if I go to that department at any counter, Coty or Monteil, and if I ask for "Pasteuized" cream, they get me the Rubinstein "Pasteurized" cream.

Q. And when you ask for it do you sometimes just ask for a "Pasteurized" cream? If I go to these other departments, I'll say I want Rubinstein's "Pasteurized" cream.

Q. To your knowledge, have you ever seen anybody else's "Pasteurized" cream? A. No.

Q. What do you associate the word "Pasteurized" cream with, with reference to the manufacturer? A. I never associate it with anything. All I know is Rubinstein's "Pasteurized" cream and that's all I ever knew about it.

Plaintiff's Exhibit 1

Q. Is your primary association with "Pasteurized" cream with the manufacturer Helena Rubinstein? A. That's right.

Q. Now, in your general experience, and you, I mean as a housewife, is part of your choice in the product based upon the manufacturer, is this important to you? A. I think so, yes, definitely yes.

Q. And generally to women that are fashion conscious, as you obviously are, are there certain prestige symbols associated with the manufacturer of certain products? A. Yes.

Q. Now, assuming that hypothetically you saw on the counter identical jars, one says Helena Rubinstein "Pasteurized" cream with the name Helena Rubinstein, and right next to it is another jar of cream, just the plain label "Pasteurized" cream. Would you have any preference as to one against the other? A. Yes I only go for the names probably, and I wouldn't choose anything without the name I knew. I wouldn't use anything unless I knew the name.

Q. And would you choose the Helena Rubinstein product? A. That's right.

Q. Or would you do that because you immediately associated the name "Pasteurized" cream with Helena Rubinstein? A. That's right, yes.

Q. And when you purchase this cream and look at the name "Pasteurized", is this an indication to you that this is immediately a Helena Rubinstein product? A. Yes.

Mr. Sandground: I have no further questions.

Plaintiff's Exhibit 1

Cross-Examination by Mr. Roeming:

Q. In relation to the last question and answer, if you have the label, a jar here that has "Pasteurized" face cream on it, and in addition says Helena Rubinstein, Inc. on it and then you have here a jar which says merely "Pasteerized" face cream and the Helena Rubinstein name is not on it, which one would you buy? A. The one with the Helena Rubinstein name on it.

Mr. Roeming: Thank you.

Redirect Examination by Mr. Sandground:

Q. Would you do this because of the association with the word "Pasteurized" with Helena Rubinstein? A. Yes.

Q. Let me ask you one more question, as a purchaser, and as an American housewife. When you started using this cream, did you ever buy the cream because you thought it was pasteurized, like milk? A. I never associated it with anything, really. All I knew was that it was Helena Rubinstein "Pasteurized" cream and that's all I ever knew. I didn't associate it with anything.

Q. You did associate it with Helena Rubinstein? A. Oh yes, but not with milk or anything.

Q. Nothing to do with the pasteurized process? A. No, nothing like that. No, it didn't come to my mind at all.

Q. And the important thing to you was that this was a Helena Rubinstein product, is that right? A. That's right.

Q. It's just a name and that name is indicative to you of one thing, a Helena Rubinstein product? A. That's right, that's all.

Re-cross Examination by Mr. Roeming:

Q. Are you familiar with emulsified creams? A. I really am not too familiar with them, no. Emulsified cream to me is an enriching cream, that I remember, that's all.

Mr. Roeming: I have nothing further.

Mr. Sandground: Will you waive formal signature of your deposition with the Reporter?

Mr. Roeming: Yes.

Mr. Sandground: The signature on all depositions is hereby waived.

(Witness excused)

(Whereupon the examination was concluded.)

Plaintiff's Exhibit 1

County of New York
State of New York—ss.:

I, Rose Irwin, do hereby certify that the foregoing depositions of Justin Deal, Cecelia Esposito, Angela Monti, Bluma Mushlin, Roslyn Steinberg, Thelma Cola, were taken by me stenographically and afterwards transcribed under my supervision; that they testified as herein set forth; that the taking of said depositions was commenced at 10:00 A. M. on the 10th day of April, 1963 and completed at 3:00 P. M. on the 10th day of April 1963 at 655 Fifth Avenue, New York, New York.

I further certify that I am not connected by blood or marriage with either of the parties, nor am I a relative or employee, attorney or counsel of any of the parties, nor am I a relative or employee of either of such counsel or attorneys, or interested directly or indirectly in the matter in controversy.

In Witness Whereof, I have hereunto set my hand and seal of office this 16th day of April, 1963.

Rose Irwin
Rose Irwin
Notary Public,
State of New York
Qualified in Nassau County
No. 30-7042610
Term Expires March 30, 1964
(seal)

PLAINTIFF'S EXHIBITS 1A THROUGH 1I IN EVIDENCE

[For the Convenience of Court and Counsel This Exhibit Is Bound in on the Opposite Page]

cc: Mr. Monosson
Mr. Medgyes

February 10, 1947

Miss C. A. Burke

Louis A. Stone

In answer to your telephone inquiry Friday, February 7, 1947, regarding the use of quotation marks on "Pasteurized," "Water Lily," and "Herbal." I can repeat the information heretofore transmitted to Mr. Medgyes in December, 1945, and subsequently confirmed in February and March of 1946.

The above product names were originally used without quotation marks. The propriety of their use, because of the implications, was questioned by the Federal Trade Commission and the Food & Drug Administration. The Federal authorities took the position that we could not continue the use of these product names, and a compromise was worked out with the authorities by Dr. Sharlit, the compromise consisting of our placing quotation marks around the names as indicated.

Since there has been no change in the products, we were advised to continue the use of the quotation marks. This matter was submitted to Sherman & Goldring for opinion, and the necessity for quotation marks was confirmed by them.

PLAINTIFF'S
EXHIBIT

1-A

Defs 1A thru I in Evidence
4/10/63
R9

11-1-56
copy sent to
Miss Kramer

[illegible]

HELENA RUBINSTEIN, Inc.
Inter-Office Correspondence

Date June 7, 1946

o Mr. Louis A. Sternberg From C. V. [illegible]

Re: Quotation Marks around Water Lily

Miss Kramer said she visited the F.T.C. but they have nothing,- no record of above.

She wonders if it could be that there had been a law suit or litigation on the name of Water Lily?

PLAINTIFF'S
EXHIBIT
1-B

1-B

HELENA RUBINSTEIN, Inc.

Inter-Office Correspondence

Date June 3, 1946

File - Labelling

From Louis A. Sternberg

Re:

I called Miss Kramer re Water Lily quotation marks. Miss Kramer stated that she had rendered no opinion on this point but that she would make inquiries of the Federal Trade Commission, New York City office, regarding the use of quotation marks on Pasteurized, Herbal and Water Lily, and would advise me within the next couple of days.

I called Medgyes and stated that I would recommend the use of quotation marks on Water Lily following the reasoning and conclusion reached regarding quotation marks on Herbal and Pasteurized. I told Mr. Medgyes that Miss Kramer would have an answer from the F.T.C. within the next couple of days and I would then advise him.

He said he would hold up the labels on Water Lily this week.

Follow this up Thursday, June 6, 1946.

June 6, 1946 - Mr. Sternberg called Miss Kramer and she has no word on above as yet. Tomorrow she plans to visit the FTC and discuss it with them.

PLAINTIFF'S
EXHIBIT

1-C

1-C

HELENA RUBINSTEIN, Inc.

Inter-Office Correspondence

Date May 1, 1946

Louis A. Sternberg, Esq.

From C. V. Fawns

Re: Labelling for new jars, bottles, etc.

Medgyes phoned and said I sent him a copy of the wrong memo. He wanted your memo stating that it was all right to put on the back of the jar the name of our firm and the contents, etc., rather than on the front as we have it now.

I said it must have been verbal as I did not have a memo on it.

Mr. Medgyes wants you to send him a memo today to the above effect. He said everything is all set with the manufacturer, etc. but he wants your written approval first.

- - - - - - - - - -

I've been thinking. Do you think you should see samples of what he plans to do.

[illegible] - 1:55 [illegible]
[illegible]

PLAINTIFF'S
EXHIBIT

1-D

HELENA RUBINSTEIN, Inc.

Inter-Office Correspondence

Date May 1, 1946

Mr. L. Hodges

From Lewis A. Sternberg

Re: Labels - "Pasteurized" Face Cream
New Jar - Printing and Labelling

I have examined the jar re-submitted for my inspection and approval, regarding printing and labelling, and would like to advise you as follows;

1. Since the printing and labelling on this jar are exactly similar to the printing and labelling covered in my original memorandum to you of December 17, 1945, there is no change in the situation. It is my understanding that the actual directions for use will appear printed above the name of "Helena Rubinstein, Inc., N. Y. Distributor."

2. I would like to call attention again to the fact that "Pasteurized" should appear in quotation marks, in accordance with my original suggestion and letter of Sherman & Goldring addressed to you under date of March 4, 1946.

3. Since the jar submitted is neither accurate nor complete, I would be very happy to approve for you a jar complete with labelling and directions for use.

PLAINTIFF'S
EXHIBIT

1-E

HELENA RUBINSTEIN, Inc.
Inter-Office Correspondence

Date ~~April 30, 1946~~

Mr. L. Medgyes
From G. V. Fawns

Re:

Following
lowing is a copy of Mr. Sternberg's memo to you dated December 17, 1945, inasmuch as
state you are unable to find your original copy:

AT
your request, I have examined the following jars and bottles, and submit the following
ments:
comments;

"Herbal" Skin Lotion - The labels presently in use on this product show the word "Herbal" in quotation marks. The present bottles also have a direction use label.

I understand that the smallest size at the present time is 6 fl. oz., priced at $1.00 and that bottle submitted to me is marked "4 oz." I would like to know the proposed price of the 4 oz. bottle, inasmuch as a new size might require approval of the OPA.

"Pasteurized" Face Cream - Labels used on this product carry the word "Pasteurized" in quotation marks. Since I think that either one of the proposed labels is in order, you may be guided by your preference as to which one you will use. The price of the present 3-3/4 oz. jar is $1.00."

PLAINTIFF'S
EXHIBIT

1-F

SHERMAN AND GOLDRING
51 MADISON AVENUE
NEW YORK 10, NEW YORK

March 4th
1946

PLAINTIFF'S
EXHIBIT
1-G

COPY

Mr. L. Hedgyes
Helena Rubinstein, Inc.
715 Fifth Avenue
New York, New York

Dear Mr. Hedgyes:

We are in receipt of your communication of February 28th with reference to the requirement of using quotation marks about the words "Herbal" and "Pasteurized" on Helena Rubinstin's Herbal and Pasteurized products. Sometime ago we discussed this matter with Mr. Sternberg and came to the conclusion that it would be necessary for us to retain these quotation marks. We were informed that although the original Herbal and Pasteurized registrations were without quotation marks, these marks did appear in the subsequent assignment of the trade mark from Helena R. Titus to Helena Rubinstein, Inc. In the renewal of registration, these quotation marks also appear.

At one time there undoubtedly was some legal reason for the insertion of these marks. We have been in touch with Mr. Nadel on this score and he informs us that he filed an opinion with the Company a long time ago recommending the user of these quotations marks on some legal question which arose at that time and which he cannot now remember.

Under these circumstances and in view of the long continued practice of the Company for almost 20 years, we recommend that the use of the quotation marks about "Herbal" and "Pasteurized" be continued.

Very truly yours,
SHERMAN AND GOLDRING

R. Kramer

RK:DW
(Copy to Mr. Sternberg)

12-1-56
1 copy sent
to Miss Hagner

FILE
MADAME RUBINSTEIN
MR. STERNBERG ✓
MISS RANDOLPH

2/28/46

Mr. Sherman L. Medgyes

Dear Mr. Sherman:

I am re-designing the Helena Rubinstein treatment line, and I notice that we use our Herbal Products and our Pasteurised Products with quotations for the words Herbal and Pasteurised.

As this does not look too well from the artistic point of view, I would like to eliminate the quotation marks. Will you please tell me whether from the legal point of view you find any objection against this.

Yours sincerely,

LM

3/1/46

PLAINTIFF'S
EXHIBIT

1-H

HELENA RUBINSTEIN, Inc.
Inter-Office Correspondence

cc: Miss G. A. Burton

Date December 17, 1945

Mr. Ladislas Medgyes From Louis A. Sternberg

Re:

At your request I have examined the following jars and bottles, and submit the following comments:

1. "Herbal" Skin Lotion - The labels presently in use on this product show the word "Herbal" in quotation marks. The present bottles also have a direction use label.

   I understand that the smallest size at the present time is 6 fl. oz., priced at $1.00 and that bottle submitted to me is marked "4 oz." I would like to know the proposed price of the 4 oz. bottle, inasmuch as a new size might require approval of the OPA.

2. "Pasteurized" Face Cream - Labels used on this product carry the word "Pasteurized" in quotation marks. Since I think that either one of the proposed labels is in order, you may be guided by your preference as to which one you will use. The price of the present 3-3/4 oz. jar is $1.00.

PLAINTIFF'S
EXHIBIT

1-I

Plaintiff's Exhibit 2

[For the Convenience of Court and Counsel This Exhibit Is Bound in on the Opposite Page]

Registered Feb. 20, 1940 **Trade-Mark 375,501**

PLAINTIFF'S
EXHIBIT

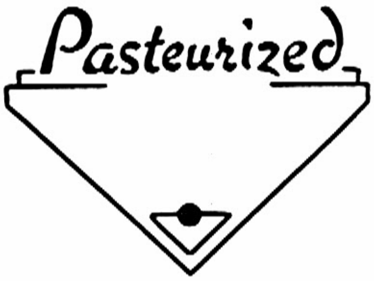
2

UNITED STATES PATENT OFFICE

Gabrielle Sorino, New York, N. Y., assignor to
Quesor, Inc.

Act of February 20, 1905

Application September 8, 1939, Serial No. 423,443



STATEMENT

To the Commissioner of Patents:

Gabrielle Sorino, a citizen of the United States of America, residing at New York city, New York, and operating and doing business at 38 East 9th Street, New York city, New York, has adopted and used the trade-mark shown in the accompanying drawing, for TALCUM POWDER, TALC, BODY TALC, BATH DUSTING POWDER, FACE POWDER, DEODORANT POWDER, AND AFTER-SHAVE TALCUM POWDER, in Class 6, Chemicals, medicines, and pharmaceutical preparations, and presents herewith five specimens showing the trade-mark as actually used by applicant upon the goods, and requests that the same be registered in the United States Patent Office in accordance with the act of February 20, 1905.

The trade-mark has been continuously used and applied to said goods in applicant's business since May 19, 1939.

No claim is made to the word "Pasteurized" apart from the mark as shown on the drawing.

The trade-mark is applied or affixed to the goods, or to the packages containing the same, by placing thereon a printed label on which the trade-mark is shown; and also by lithographing and otherwise displaying the mark on cans and analogous transportable containers for the goods.

The undersigned hereby appoints the firm of Clarence A. O'Brien and Hyman Berman, registry No. 14,119, consisting of Clarence A. O'Brien and Hyman Berman, whose post-office address is 1333 F St., N. W., Washington, D. C., as attorneys, with full power of substitution and revocation, to prosecute this application, to make alterations and amendments therein, to receive the certificate and to transact all business in the Patent Office connected therewith.

GABRIELLE SORINO.

Plaintiff's Exhibit 3

[*For the Convenience of Court and Counsel This Exhibit Is Bound in on the Opposite Page*]

Registered Mar. 16, 1926. **Trade-Mark 210,650**

PLAINTIFF'S
EXHIBIT
3

UNITED STATES PATENT OFFICE.

HELENA J. TITUS, OF NEW YORK, N. Y.

ACT OF MARCH 19, 1920.

Application filed April 4, 1925. Serial No. 212,219.

PASTEURIZED
CREAM

STATEMENT.

To the Commissioner of Patents:

Helena J. Titus, a citizen of the United States of America, residing at Greenwich, Connecticut, and doing business at No. 46 West 57th Street, in the borough of Manhattan, city of New York, and State of New York, has adopted and used the trade-mark shown in the accompanying drawing, for FACIAL AND MASSAGE CREAMS, in Class 6, Chemicals, medicines, and pharmaceutical preparations, and presents herewith five specimens showing the trade-mark as actually used by applicant upon the goods and requests the same be registered in the United States Patent Office under the act of March 19, 1920. The trade-mark has been continuously used and applied to said goods in applicant's business since March 1st, 1923. The trade-mark has been in bona fide use for not less than one year in interstate commerce by the applicant. The trade-mark is applied or affixed to the goods or to the package containing the same by placing thereon a printed label on which the trade-mark is shown and is described as "Pasteurized Cream."

HELENA J. TITUS.

Plaintiff's Exhibit 4

Certified photocopy of all the proceedings in the Patent Office to be lodged as documentary evidence pursuant to order of the Court.

The decision of the Trademark Trial and Appeal Board is reported at 131 USPQ 152.

Opinion

UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF COLUMBIA

Civil Action No. 3332-61

—o—

[SAME TITLE]

—o—

This is a civil action brought pursuant to 15 U. S. C. Section 1071 and 35 U. S. C. Section 145 in which plaintiff as the applicant in an action for trademark registration, Serial No. 25,892, filed March 11, 1957, sought to have the Court authorize the Commissioner of Patents to issue to it, on the basis of that application, a certificate of registration for the word "Pasteurized" on the Principal Register established by Section 1 of the Trademark Act of 1946.

The Examiner and the Trademark Trial and Appeal Board refused to register the mark as being highly descriptive of such a product and that the term is not sufficient to indicate the origin of any product which is capable of being pasteurized when the term is used thereon.

It is alleged in the application that the said mark has been continuously used in plaintiff's business since March 1, 1923, and specimens filed with the application comprised photographs of the containers of applicant's goods, on which the following appears on the front portion thereof:

"Pasteurized" Face Cream Special
The Perfect Cleansing and Beauty Cream
Helena Rubinstein

It has been the position of the tribunals of the Patent Office that the involved term is so highly descriptive of applicants face cream that it is incapable of identifying such product and distinguishing it from like goods of others, and that it simply denotes that the cream could be or has been treated by pasteurization. It was not denied in the Patent Office that it had been pasteurized, but the contention made there was that whether or not it was so processed it is not material for the reason that it had acquired a secondary meaning as an indication of origin.

The definition of the word "Pasteurization" in Webster's New International Dictionary, Second Edition (1947) is defined as "The partial sterilization of a fluid at a temperature * * * which does not greatly change its chemical composition * * *".

In the deposition of a witness for plaintiff it was stated that in making the cream the mixture of ingredients was heated up to 130 or 150 degrees Farenheit. That is substantially the range of pasteurization.

Opinion

Plaintiff is the assignee of Registration No. 275,501, issued February 20, 1940 (under the Trademark Act of 1905) to a predecessor, published (under Section 12(c) of the Act of 1946) on April 5, 1960, and renewed. The term "Pasteurized" was disclaimed therein which seemingly was an admission by the registrant that the word was descriptive of the goods to which it was applied. Therefore, plaintiff's ownership of said registration cannot be deemed prima facie evidence of distinctiveness or of any evidentiary value with respect to applicant's claim of secondary meaning.

The use of "Pasteurized" as has been made by plaintiff herein is not of a nature calculated to cause purchasers to recognize this term as an indication of origin for plaintiff's face cream rather than as a term used merely to describe face cream produced by plaintiff which could or has been pasteurized.

The fact that plaintiff and its predecessor alone have used the term "Pasteurized" continuously in connection with facial and massage creams for over thirty years, and have been the only ones to do so, is not of itself sufficient to establish a secondary meaning of the term, and furthermore, the fact that the involved term has been used so extensively and over such a long period of time cannot, in the opinion of the Court, make it properly a term for registration as applied for, particularly in view of the fact that one of plaintiff's own witnesses in his deposition stated that the materials entering into the cream have been substantially pasteurized.

For the reasons herein given, the Court finds for the defendant and against the plaintiff in that the decisions of the tribunals of the Patent Office have not been shown to be in clear error.

The findings of fact have been included in what has been hereinbefore stated, and as a conclusion of law the Court holds that plaintiff is not entitled to the registration as prayed for.

Dated: June 27, 1963.

JOSEPH R. JACKSON
Judge

Judgment

UNITED STATES DISTRICT COURT

For the District of Columbia

Civil Action No. 3332—61

———o———

[SAME TITLE]

———o———

This action came on to be heard on May 14, 1963, and thereupon, upon consideration thereof, it is this 27th day of June, 1963,

Adjudged, that the Complaint be, and it is hereby dismissed, with costs against the plaintiff.

Joseph R. Jackson
Judge

Notice of Appeal

UNITED STATES DISTRICT COURT

For the District of Columbia

Civil No. 3332—61

HELENA RUBINSTEIN, INC.
Plaintiff.

vs.

DAVID L. LADD
Defendant.

Notice is hereby given this 26 day of July, 1963, that Plaintiff, Helena Rubinstein, Inc. hereby appeals to the United States Court of Appeals for the District of Columbia from the judgment of this Court entered on the 27 day of June, 1963 in favor of David L. Ladd against said Helena Rubinstein, Inc.

MARK B. SANDGROUND
Attorney for Plaintiff

GEORGE C. ROEMING, ESQ.
U. S. Patent Office
Wash. D. C.

Filed
Jul 26 1963
HARRY M. HULL, Clerk

BRIEF FOR APPELLEE

United States Court of Appeals
DISTRICT OF COLUMBIA CIRCUIT

Appeal No. 18,073

HELENA RUBINSTEIN, INC., APPELLANT

v.

DAVID L. LADD, COMMISSIONER OF PATENTS, APPELLEE

Appeal From The Judgment of the United States District Court For The District of Columbia

CLARENCE W. MOORE,
Solicitor, United States Patent Office

GEORGE C. ROEMING,
Of Counsel

United States Court of Appeals
for the District of Columbia Circuit

FILED NOV 18 1963

Nathan J Paulson
CLERK

STATEMENT OF QUESTIONS PRESENTED

1. In all the evidence before the District Court, was there rational basis for the findings of the Patent Office Trademark Trial and Appeal Board and of the District Court that, in effect, appellant's alleged trademark "PASTEURIZED" is descriptive or deceptively misdescriptive of face cream in the sense of Section 2(e)(1) of the Trademark Act of 1946 (15 U.S.C. 1052)?

2. In all the evidence before the District Court, was there rational basis for the findings of the Patent Office Trademark Trial and Appeal Board and of the District Court that, in effect, appellant has failed to prove that his alleged trademark "PASTEURIZED" has acquired among purchasers of face creams a new primary meaning of origin in the sense of Section 2(f) of the Trademark Act of 1946 (15 U.S.C. 1052)?

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United States Court of Appeals

DISTRICT OF COLUMBIA CIRCUIT

Appeal No. 18,073

HELENA RUBINSTEIN, INC., APPELLANT

v.

DAVID L. LADD, COMMISSIONER OF PATENTS, APPELLEE

Appeal From The Judgment of the United States District Court For The District of Columbia

COUNTERSTATEMENT OF THE CASE

This is an appeal (J.A.-77A) from the judgment (J.A.-76A) of the United States District Court for the District of Columbia dismissing the complaint (J.A.-3A) in an action brought under 15 U. S. Code 1071 (Section 21 of the Trademark Act of 1946)* and 35 U. S. C. 145. In that action plaintiff, Helena

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* Subsequent to the filing on October 10, 1961, by appellant of its complaint, Section 21 of the Trademark Act of 1946 (15 U.S.C. 1071) was amended by Public Law 87-772, 76 Stat. 769, 772, approved and effective October 9, 1962.

Rubinstein, Inc., as the applicant in an application for trademark registration (P. Ex. 4), Serial No. 25,892, filed March 11, 1957, sought to have the District Court authorize the Commissioner of Patents to issue to it a certificate of registration on the Principal Register established by the Trademark Act of 1946 (15 U. S. C. 1052), based on that application, of the alleged mark PASTEURIZED (P. Ex. 4, page 26 and page 24, midpage) for face cream (P. Ex. 4, page 2). In the Patent Office, both the Examiner (P. Ex. 4, pages 49, 50, 56 and 57) and the Trademark Trial and Appeal Board (P. Ex. 4, pages 62 through 67, reported at 131 USPQ 152) refused registration on the grounds that the alleged mark is descriptive of a face cream or its ingredients (in the sense of Section 2(e)) and that "secondary meaning" or new primary meaning of origin (for registration under Section 2(f)) had not been proved.

For the trial, plaintiff took six depositions in the city of New York (J.A.-27A through 65A) and produced two witnesses in Court (J.A.-9A through 26A).

The District Judge found for the defendant from the bench (J.A.-26A) and subsequently rendered an opinion (J.A.-72A) including findings of fact and conclusions of law.

STATUTES AND RULES INVOLVED

See appellant's brief, pages 8 and 9.

It is noted that in its brief, appellant correctly makes no argument that its registration under the

Act of 1920 (J.A. 70A) is evidence that the term "PASTEURIZED" is not descriptive of face cream or that it is evidence of secondary meaning. Accordingly it is unnecessary to include here any portion of the Trademark Act of 1920.

SUMMARY OF ARGUMENT

1. Appellant's chemist witness admitted that the procedures of pasteurization are practiced on the ingredients of appellant's face cream although appellant's purpose is emulsification rather than pasteurization. Another witness of long experience in selling cosmetics suggested that a face cream could have milk as an ingredient. There is no evidence to refute that statement. There can be no question whatever that a face cream having milk as an ingredient would contain those bacteria of milk which it is the aim of pasteurization to destroy, and that for such a face cream the specific heating process of emulsification would clearly constitute pasteurization both as to procedure and result. The term "pasteurized" is therefore either descriptive or deceptively misdescriptive of appellant's face cream in the sense of Section 2(e)(1) of the Trademark Act of 1946.

2. As to the meaning of "Pasteurized" to purchasers of face creams, appellant adduced the testimony of only one consumer not engaged in the retail trade in cosmetics. The testimony of that witness and of other witnesses engaged in the retail trade in cosmetics fails to prove that among purchasers of face creams the word "Pasteurized" has acquired

a new primary meaning of origin. However, the testimony of those witnesses establishes that habitual purchasers of appellant's face cream bearing the designation "Pasteurized" know that a face cream so designated is sold only under the highly advertised and well known trademark "Helena Rubinstein", and that they associate the word "pasteurized" so closely with the "Helena Rubinstein" trademark that they would not buy a product designated "Pasteurized face cream" and not bearing the "Helena Rubinstein" trademark, but would buy the product so designated and bearing the "Helena Rubinstein" trademark. That testimony establishes that in the minds of purchasers the term "Pasteurized" alone does not have a primary meaning of origin. No other significant evidence as to secondary meaning was adduced.

3. Since appellant's alleged mark is either descriptive or deceptively misdescriptive of its product, and since new primary meaning of origin has not been proved, under Section 2(f) of the Trademark Act of 1946 there is no basis for registration, and registration is positively barred by Section 2(e).

ARGUMENT

Appellant's burden of proof

Under Rule 52(a) of the Federal Rules of Civil Procedure; *Abbott et al.* v. *Coe*, 71 App. D. C. 195, 109 F.2d 449; *Esso Standard Oil Co.* v. *Sun Oil Co.*, 97 U. S. App. D. C. 154, 229 F.2d 37; *Bechtold* v. *Watson*, 102 U. S. App. D. C. 353, 253 F.2d 875, appellant has the burden of proving that there is no rational basis in all the evidence before the District Court for its decision agreeing with the Patent Office tribunals in refusing the registration sought by appellant.

In this respect it is noted that while the District Judge from the bench (J.A.-26A) based his finding for defendant primarily on plaintiff's failure to prove clear error in the decisions of the Patent Office, subsequently in his opinion (J.A.-72A) he made his own positive findings substantially in agreement with those of the Trademark Trial and Appeal Board.

The issue of descriptiveness of the alleged mark

The Trademark Trial and Appeal Board in its opinion (P. Ex. 4, page 63) stated:

> It has been the Examiner's position that the term "PASTEURIZED" merely signifies that applicant's face cream has been treated by the pasteurization method to render it sterile or partially sterile. Applicant has not denied that its face cream has been pasteurized * * *

The District Court in its opinion (J.A. 73A) similarly noted with respect to plaintiff's face cream:

> It was not denied in the Patent Office that it had been pasteurized.

In its brief before this Court appellant has not attempted to demonstrate from the record (P. Ex. 4) that there is error in the findings that it did not deny in the Patent Office that its face creams had been pasteurized.

Referring to appellant's Trademark Registration No. 375,501 [1] (J.A. 68A), the Trademark Trial and Appeal Board in its decision noted that it involved the term "PASTEURIZED" for various cosmetics powders but that the term was disclaimed therein. The Board correctly held this registration to constitute an admission by the registrant that, at least at the time of the issuance of the registration, the term "PASTEURIZED" was descriptive of cosmetic powders (P. Ex. 4, page 64).

The Trademark Trial and Appeal Board in reliance on the definitions of "pasteurize" and "pasteurization" in Webster's New International Dictionary, Second Edition, unabridged (1947),[2] stated (P. Ex. 4, page 63):

> It is clear from this definition that applicant's face cream as such or the ingredients thereof could be pasteurized; and to describe a product which has been so treated as "PASTEURIZED" is a normal and ordinary use of the language. But

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[1] See appellant's brief, pages 2 and 3, and P. Ex. 4, pages 10 and 19, for the background of appellant's acquisition of this registration.

[2] That definition in its complete text reads:

> The partial sterilization of a fluid at a temperature (131°-158°F.) which does not greatly change its chemical composition. Certain pathogenic organisms and other undesirable bacteria are destroyed by this process while spores and lactic acid bacteria survive. The method was devised by Pasteur to check fermentation in wine, milk, etc. The standard for pasteurization of milk is 145°F. for a period of 30 minutes, followed by rapid cooling to below 50°F. and storage at that temperature.

The definition in Webster's Third New International Dic-

> even if, in fact, applicant's face cream has not been pasteurized, there is little doubt but that purchasers of "pasteurized" face cream would be likely to assume that it has.

In an attempt to show error in these findings of the Board as to *descriptiveness* or *deceptive misdescriptiveness* of the alleged mark in relation to face creams, appellant adduced the testimony of the witness Deal (J.A.-28A through 31A), a product-development chemist in the employ of appellant (J.A. 30A). The witness admitted (J.A.-29A) that he is not an expert on pasteurization and that, in preparing for his testimony, he consulted textbooks and dictionaries. He defined pasteurization more broadly than the dictionaries, stating (J.A.-29A):

> Simply, it consists of heating to an elevated temperature and cooling, to eliminate bacteria in the media.

On cross-examination the witness Deal responded to questions as follows (J.A.-30A):

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tionary (unabridged) is broader and reads as follows:

> pasteurization—1: a method devised by Pasteur to check fermentation (as in wine or milk) involving the partial sterilization of a substance (as a fluid) at a temperature and for a length of time that does not greatly change its chemical composition but does destroy many pathogenic organisms and other undesirable bacteria through spores and thermoduric organisms (as lactic acid bacteria) survive.
>
> 2: the use of electricity, hot water, or steam to bring soil (as in a greenhouse bench) to a temperature of 180°F for a period of 30 minutes in order to kill nematodes, weed seeds, and various fungi and bacteria—compare STERILIZATION.

> Q. Now, in the course of making this cream is this mixture of ingredients at any time heated up to 130 or 150 degrees Fahrenheit? A. Yes. Q. And when it is so heated, for what length of time would it be heated to such a temperature? A. It would probably remain at that temperature for at least half an hour.

It is clear that the witness Deal thus admitted that, in the terms of his own definition, the specific procedural steps of pasteurization are practised on the mixture of the ingredients of appellant's cream. He had previously qualifiedly denied that appellant's face cream is pasteurized, stating that there is no objective to pasteurizing the cream (J.A.-29A, last 6 lines).

Lack of objective or purpose is clearly not a significant test. If, in mid-winter a farmer's wife in Northern Minnesota on a stove heats raw milk to 150°F. for more than half an hour only because her children like to drink warm milk when they come home from school, and thereafter the children drink only half the heated milk and the other half cools rapidly on a table in a cold part of the home where it was left inadvertently, it does not follow that the milk was not pasteurized.

While the witness Deal testified that appellant's purpose in heating in the admitted manner was to emulsify fats, there was no evidence adduced by appellant that emulsification[3] of the ingredients of ap-

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[3] Webster's New International Dictionary Second Edition, unabridged, defines "emulsion" variously as:

2. Pharm. A suspension of oleaginous or resinous ma-

pellant's face cream produces chemical change such as is excluded in the dictionary definitions of "pasteurization".

The witness Angela Monti had seventeen years' experience in selling cosmetics (J.A.-42A). She responded to a question on direct examination as follows (J.A.-44A):

> Q. What's the primary association with the term "Pasteurized" cream mean to you from the point of manufacture? A. Well, its probably made from a milk base.

There is no evidence that a face cream could not have raw milk or raw cream as an ingredient. If it had raw milk or raw cream as an ingredient, before emulsification by heating the face cream ingredient mixture would contain the milk bacteria which are normally destroyed by pasteurization. Accordingly, in the subsequent heating for emulsification of fats, pasteurization would take place simultaneously with emulsification to destroy those bacteria.[4]

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terial in an aqueous liquid (or of a aqueous liquid in an oil), with gum or a similar agent, * * *

4. Physical Cem. A suspension of fine particles or globules of a liquid in a liquid. It has two phases, the dispersed phase and the continuous phase (see these terms).

That same dictionary defines "dispersed phase" as:

> That phase of a substance in which the material, in finely divided particles, is in a state of suspension in some other substance called the *continuous phase*, dispersion medium, etc. * * *

[4] These facts are clearly distinguishable from the case *In re De-Raef Corp.*, 120 USPQ 318 (1959, TTAB) cited at

It is thus clear that appellant has failed to prove that the term "PASTEURIZED" cannot be descriptive of a face cream.

It is immaterial whether or not the term is actually descriptive of appellant's specific face cream.

The Restatement of Torts, § 721, states:

> A designation cannot be a trade-mark for goods if it is likely to be regarded by prospective purchasers as a common name or generic name for such goods or as descriptive of them or of their ingredients, quality, properties, functions or uses.
>
> Comment:
>
> * * * *
>
> b. Misdescription. A designation may be regarded by purchasers as descriptive under the rule stated in this Section though it ascribes to the goods a quality or attribute which they do not have but might have. The issue is not whether the designation describes accurately but whether it describes. Thus, "Metalized" cannot be a trade-mark for radio tubes, whether the tubes are actually made of or treated with metal, or are glass tubes which have never been touched by metal. This is true apart from the question as to the effect of the misrepresentation, as to which see §§ 726 and 749.

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page 13 of appellant's brief, in which it was not positively held that the powdered milk ingredient involved is commonly described as "powdered cultured milk" and where it was held that the presence of the powdered milk ingredient in a pancake mix did not make the term "cultured" descriptive of the mix, particularly when the term also might suggest to some meaning of "cultivated".

Thus, according to the Restatement the term "PASTEURIZED" is descriptive of and not a trademark for face creams if it describes a possible face cream.

Moreover, Section 2(e) of the Trademark Act of 1946 (15 U. S. C. 1052) bars registration of marks which are "deceptively misdescriptive" and where secondary meaning has not been proved under Section 2(f).

It is submitted that in the instant case, the term "PASTEURIZED", as the Board and the District Court in effect held, is clearly either descriptive or deceptively misdescriptive of face creams in the sense of Section 2(e) of the statute. See *Gold Seal Co.* v. *Weeks, Watson, and S. C. Johnson & Son Inc.*,[5] 129

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[5] At pages 11 and 15 of its brief, appellant's comments on this case contain numerous inaccuracies.

In the *Gold Seal* case, the District Court found the term "Glass Wax" for glass cleaner and polish to be *deceptively misdescriptive* in the sense of Section 2(e), 129 F. Supp. 935, but not deceptive in the sense of Section 2(a), (page 933), and not merely descriptive in the sense of Section 2(e) (page 940). The District Court further found that Johnson on its counterclaim under Section 43(a), was not entitled to relief in the form of injunction, profits, damages or costs because it had not shown damage or likelihood of damage by false description or representation (page 940). Johnson appealed from the dismissal of the counterclaim under Section 43(a) which was the only matter affirmed in *S. C. Johnson & Son, Inc.* v. *Gold Seal Company et al.*, 97 U. S. App. D. C. 282, 230 F.2d 832.

The District Court had refused to consider the merits of the issue of secondary meaning under Section 2(f), 129 F. Supp. 937. The District Court clearly *upheld* the Patent Office *refusal* of registration on the *sole ground* that the mark was *deceptively misdescriptive* in the sense of Section 2(e).

Subsequently the Examiner found the evidence of second-

F. Supp. 928, 934, 935, (D.C. D.C. 1955) and decisions cited in note 14 therein.

Accordingly, to show itself entitled to registration, appellant must prove clear error in the failure of the Trademark Trial and Appeal Board and the District Court to find proof of secondary meaning in all the evidence adduced by appellant.

The issue of secondary meaning

A word or a group of words originally descriptive of a product may acquire trademark significance where in the minds of the purchasing public it acquires a new primary meaning of origin of the product (secondary meaning). *G. and C. Merriam Co.* v. *Saalfield*, 198 F. 369 (6th Cir. 1912); *Kellogg Company* v. *National Biscuit Company*, 305 U. S. 111.

Secondary meaning or new primary meaning of origin may be proved under Section 2(f) to establish registrability of appellant's alleged mark. Section 2(f) in part states:

> The Commissioner *may* accept as prima facie evidence that the mark has become distinctive, as applied to the applicant's goods in commerce, proof of substantially exclusive and continuous use thereof *as a mark* by the applicant in commerce for the five years next preceding the date of filing of the application for its registration. (emphasis added)

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ary meaning under Section 2(f) sufficient and passed the application for publication. See the summary of all these facts in *S. C. Johnson & Son, Inc.* v. *Gold Seal Company*, 120 USPQ 276 (Patent Office Examiner in Chief, 1959), which case is cited at page 11 of appellant's brief.

In the sentence the italicized words "as a mark" are of primary importance.[6] Obviously evidence of substantially exclusive and continuous use of a term for the required time, but where the term has not been used *as a trademark*, is not relevant to secondary meaning. *In re Duvernoy*, 41 CCPA 856, 859, 212 F. 2d 202; Vandenburgh, Trademark Law and Procedure, (1959), page 26. See also *In re Circus Foods, Inc.*, 45 CCPA 803, 252 F. 2d 310, as to lack of trademark use of an alleged mark.

The Trademark Trial and Appeal Board in its decision (P. Ex. 4, page 64) noted the affidavit of Roy V. Titus (P. Ex. 4, page 14) which asserts continuous use of the alleged trademark by appellant and its predecessor since 1923 and continuous and substantially exclusive use during the 5 years preceding the filing of appellant's application for registration. However, the Board analyzed the evidence[7] of appellant's specific use of the term "PASTEURIZED" and made the following finding (P. Ex. 4, page 66):

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[6] Section 45 of the Trademark Act of 1946 (15 U.S.C. 1127) states the following definition for purposes of construing the statute:

> Mark. The term "mark" includes any trademark, service mark, collective mark, or certification mark entitled to registration under this Act whether registered or not.

[7] For the specific evidence before the Board, see in the application file, P. Ex. 4, the photograph of appellant's jar of face cream submitted as one of five facsimiles under Trademark Rule 2.57 (37 C.F.R. 2.57) and P. Ex. 4, pages 33 through 48.

> Such use of "PASTEURIZED" as has been made by applicant in this material is not of a nature calculated to cause purchasers to recognize this term as an indication of origin for applicant's face cream rather than as a term used merely to describe a face cream produced by applicant which could be or has been pasteurized.

The District Judge (J.A. 74A) made substantially the same finding upon consideration of additional evidence adduced at the trial.[8]

The evidence before the Board was sufficient to establish that over a long period appellant on a country-wide basis extensively advertised and sold creams under the designations—"Pasteurized" Face Cream Special -, - "Pasteurized" Face Cream -, -"Pasteurized" Night Cream-, -"Pasteurized" Whitening Cream-, always with prominent display of the well-known and highly advertised origin indicator - Helena Rubinstein -. There is no evidence that appellant has ever used the designations involving the word "Pasteurized" without prominent display of the well-known origin indicator Helena Rubinstein. There is no evidence that appellant has ever used the word

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[8] The case of *In re Fleet-Wing Corporation,* 122 USPQ 335 (TTAB, 1959), cited at page 12 of appellant's brief, is readily distinguishable from the instant case in that the Board specifically found that the term "CERTIFIED" was shown on the labels in the manner of a trademark.

Obviously, if appellant had been able to show prominent use of the term "pasteurized" in distinctive print and set off from terms descriptive of the product and without prominent use of a clear origin indicator, it would have had less difficulty in proving secondary meaning.

"Pasteurized" prominently offset and separate from clearly descriptive terms such as "face cream", "night cream", etc.[9]

The evidence indicates not only that over a long period of years there has been no substantial use of the term "Pasteurized" in relation to face creams by anyone other than the appellant but that habitual buyers of appellant's product know of no face cream designated "Pasteurized" other than that sold by appellant,[10] which cream also bears the well-known and highly advertised trademark "Helena Rubinstein".

It is well settled that it is the alleged mark's primary meaning of origin to the purchasing public, not the meaning to those engaged in the trade in the goods, which must be proved to establish "secondary meaning". *Kellogg Company* v. *National Biscuit Company, supra; In re Duvernoy & Sons, Inc.*, 41 CCPA 856, 212 F. 2d 202; *Skinner Mfg. Co.* v. *General Foods Sales Co.*, 52 F. Supp. 432, 448, col. 2 (D.C. Nebr.); Callman, Unfair Competition, etc., 2nd ed., Vol. 3, page 1241. See also *Bayer Co.* v. *United Drug Co.*, 272 F. 505, 510 (D.C.N.Y.).

Proof of distinctiveness or secondary meaning requires more than proof of the existence of a relatively small number of people who associate a descriptive word with a specific source. *Kellogg Company* v.

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[9] It must be presumed that appellant has brought forward the evidence of its uses which most strongly indicates intended trademark use.

[10] J.A. 61 A, last 7 lines; J. A. 11 A, midpage; J. A. 45 A, last 6 lines.

National Biscuit Company, supra; Roselux Chemical Company, Inc. et al. v. *Parsons Ammonia Company, Inc.*, 49 CCPA 931, 299 F. 2d 855.

As to the difficulty of courts in obtaining representative, unbiased pictures of what an alleged mark means to the purchasing public in relation to the issue of secondary meaning, see *Premier-Pabst Corp.* v. *Elm City Brewing Co.*, 9 F. Supp. 754 (D.C. Conn.).

Two or more marks, whether arbitrary or otherwise, may be used in such close association with each other that no one of them separately indicates the origin of the goods. Nims, Unfair Competition and Trademarks, Fourth edition, page 528; Callmann, Unfair Competition and Trademarks, 2nd edition, Vol. 3, page 1242; *General Shoe Corporation* v. *Rosen*, 111 F. 2d 95 (4th Cir., 1940). A mark is less likely to signify origin when it is accompanied by others than if it stands alone. *Vibroplex Co. Inc.* v. *J. H. Bunnell & Co., Inc.*, 23 F. 2d 490 (2nd Cir. 1928). Where there is doubt as to whether or not a word claimed as a trademark is descriptive or for some other reason may not be a valid trademark, the fact that the word always is accompanied by others and is claimed as one of a number of trademarks used on the same goods is likely to make it more difficult to prove that it is distinctive. Nims, Unfair Competition, etc., page 528. See also *Armour & Co.* v. *Louisville Provision Co.*, 283 F.42 (6th Cir. 1922) and *In re Duvernoy & Sons, Inc.*, 41 CCPA 856, 212 F 2d, 202, in both of which cases involving such facts the proof of primary meaning of origin was found insufficient.

In the present case there was called as a witness only one purchaser of the product not connected with the trade (Steinberg, J.A. 60 A). There were five witnesses with long experience as purchasing agents and/or retail sellers of cosmetics (Monti, J.A. 42 A; Cole, J.A. 49A; Mushlin, J.A. 56 A; Williams, J.A. 10A; Sabatini, J.A. 13A). The testimony of the latter group is effective to support appellant's claim of secondary meaning only insofar as it establishes *facts* from which meaning to the purchasing public can be inferred.

The consumer witness Steinberg testified (J.A. 60A) that she never had seen a jar of "pasteurized face cream" other than appellant's (which always carries the trade mark "Helena Rubinstein"), that she "never associated" the words "pasteurized cream" "with anything" (J.A. 61, last 4 lines; J.A. 63 A, lower half-page), and that as between a jar carrying the designation "Pasteurized face cream" *with* the name Helena Rubinstein on it and another carrying the designation "Pasteurized face cream" *without* the name "Helena Rubinstein" on it, she would buy the former because "she wouldn't choose anything without the name" she knew, namely the name "Helena Rubinstein" (J.A. 62A, 63A).

The evidence clearly indicates, that regardless of whatever else she may think about the word "pasteurized", the witness Steinberg does not consider that that word on a jar of face cream without the name "Helena Rubinstein" is an indicator of origin.

Various witnesses active in the cosmetics trade also were asked the question: If on a sales counter there were a jar carrying only the designation—"Pasteurized" face cream—and another jar carrying that same designation and the name "Helena Rubinstein", which would the consumer buy?

The witness Sabatini (J.A. 22A) evaded answering the question.

The witness Williams testified (J.A. 12A) that in her opinion the customer would buy the jar with the "Helena Rubinstein" name on it because the "other wouldn't have a meaning to it."

The witness Mushlin (J.A. 58A) testified that in her opinion the customer would buy the jar with the "Helena Rubinstein" name on it.

The witness Monti testified (J.A. 48A) that in her opinion, as to the jar with the term "Pasteurized" but without the name "Helena Rubinstein," the customer would ask: "Well, who makes it?"

The witness Cole testified (J.A. 52A) that in her opinion the customers would make a distinction in their buying preference between a jar carrying the designation "Pasteurized face cream" without the name "Helena Rubinstein" and another carrying both the designation and the name, and that the preferences would be for the jar carrying the "Rubinstein" name.

All this testimony is consistent with that of the only consumer witness in indicating that habitual purchasers of "Pasteurized face cream" know that the word "Pasteurized" appears only on jars of face cream carrying the well-known trademark "Helena Rubinstein", that they associate the word "Pasteurized" so closely with the trademark "Helena Rubinstein" that they would not buy a face cream carrying only the word "Pasteurized", and that therefore these consumers, regardless of what else they may otherwise think about the meaning of the word "Pasteurized", do not consider it to be *per se* an indicator of origin for face cream.

Moreover, the witnesses Monti and Mushlin in their testimony (J.A. 47A and 59A) indicated no knowledge of the scientific meanings of the terms "pasteurized" and "emulsified", but they did indicate that to them these terms indicated different kinds or grades of face cream differing in texture and richness.[11] This testimony clearly would defeat any contention that might be made that, to these two witnesses personally the term "pasteurized" primarily indicates origin rather than kind of product.[12]

The witness Williams testified (J.A. 11A) that in her experience customers do not ask merely for "pasteurized cream", but that they ask for "Rubinstein pasteurized cream". The witness Monti, on the other hand, testified that some customers do ask merely for "pasteurized face cream" (J.A. 46A). That fact alone is not significant. The testimony of the consumer witness Steinberg (J.A. 61A) indicates that at least some cosmetics departments have Rubinstein, Coty, and/or Monteil counters or sections and that when she goes to the Rubinstein counter or section she asks only for "pasteurized cream". Obviously it would be unnecessary to specify "Helena Rubinstein" when the customer is standing in front of a counter or section where there are only products sold under the trademark "Helena Rubinstein". Moreover, if a customer asks for "pasteurized face cream" at any counter it is no more an indication of meaning of origin in the word "pasteurized" than when a customer asks merely for "emulsified face cream". See J.A. 21A, lines 3 through 8.

---

[11] Note that the chemist Deal testified (J.A. 30A) that the majority of face creams including appellant's "pasteurized face cream" are emulsified. The witness Sabatini testified that she would tell a customer that Helena Rubinstein's pasteurized face cream is not an emulsified cream.

[12] *Armco Steel Corporation* v. *Watson*, 188 F. Supp. 554 (D.C.D.C. 1960), cited in appellant's brief at page 12, is distinguishable on its facts in that in that case there was no testimony of the plaintiff's witnesses which tended to defeat plaintiff's contentions of secondary meaning.

Much of the testimony adduced by appellant involves matters of opinion and conclusion. Even highly technical conclusions of law as to secondary meaning (J.A. 12A, J.A. 53A) were obtained from witnesses not shown to be qualified as experts in law without an explanation as to how the witnesses became prepared to answer questions so highly technical. Much of the testimony relating to matters other than fact was obtained by use of extremely leading questions (JA 62A and 63A). In this respect see appellee's counsel's warning that he would make no objections to testimony in view of the fact that there would be no jury and the District Judge would evaluate the testimony (JA. 28A).

It is submitted that the testimony of the witnesses adduced by appellant may be sufficient to establish that to some persons the term "pasteurized" may have the significance of a grade mark[13] or of a part of grade marks on products carrying the trademark "Helena Rubinstein." But the meager evidence adduced also tends to establish positively that to purchasers the term "pasteurized" as used by appellant on face creams does not have a primary meaning of origin.

In any event, under the *Kellogg* and *Roselux* cases, *supra*, the testimony is insufficient to establish secondary meaning for appellant's alleged mark.

---

[13] See *Coshocton Glove Co.* v. *Buckeye Glove Co.*, 24 CCPA 1338, 90 F. 2d 660, where an arbitrary term was held to be merely a grademark and not a trademark.

CONCLUSION

It is submitted that, on all the evidence before the Court, there was a rational basis for the findings both of the Trademark Trial and Appeal Board and of the District Court, and that accordingly their refusal of registration should be sustained by this Court by affirmance of the judgment dismissing the complaint in this action.

Respectfully submitted,

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Attorney for Appellee

GEORGE C. ROEMING,
Of Counsel

November 12, 1963

☆ U. S. GOVERNMENT PRINTING OFFICE: 1963 712859 432

REPLY BRIEF FOR APPELLANT

United States Court of Appeals

For the District of Columbia Circuit

Appeal No. 18,073

HELENA RUBINSTEIN, INC.,
Appellant,

v.

DAVID L. LADD, Commissioner of Patents,
Appellee.

APPEAL FROM THE JUDGMENT OF THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF COLUMBIA

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United States Court of Appeals
for the District of Columbia Circuit
FILED DEC 6 1963
Nathan J. Paulson
CLERK

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United States Court of Appeals

For the District of Columbia Circuit

Appeal No. 18,073

Helena Rubinstein, Inc.,
Appellant,

vs.

David L. Ladd, Commissioner of Patents,
Appellee.

REPLY BRIEF FOR APPELLANT

The Appellee's brief does not fairly set forth the facts or delineate the issues, as will be shown hereinafter.

First, in his Summary of Argument (p. 3), Appellee contends that a face cream could have milk as an ingredient, and that such a face cream would, therefore, be benefited by pasteurization. The contention is truly absurd. Even if a face cream did contain milk (which contention we think is more imaginative than factual), certainly such a face cream would not be kept in a refrigerator. Appellee admits that pasteurization requires storage at low temperatures (see page 6, footnote 2 of Appellee's brief). After opening a jar, face cream may remain for months on a boudoir table at room temperature. The milk, which Appellee argues it might contain, is not extracted and drunk. Further, as was pointed out in the case of *In re De-Raef Corp.*, 120 USPQ 318, cited on page 13 of Appellant's main brief, it was held that even if the term "Cultured" suggested that cultured milk was used as an ingredient of Appellant's pancake mix, it did not describe the pancake mix itself. Accordingly, the Appellee's argument in this respect is completely invalid.

On page 5 of the Appellee's brief, the Commissioner vigorously contends that the Appellant had not denied in the Patent Office that its product had been pasteurized. We submit that the Appellee's reliance on this argument is misplaced. The Appellant has not denied the contention because it felt that the contention was immaterial. Accordingly, it neither admitted nor denied the contention. However, all this is of no importance whatsoever because the present action is one *de novo*. As is well understood, an action of this type permits additional evidence to be considered, such as was submitted by the Appellant here. For example, in the case of *Circus Foods, Inc.* v. *Watson, Comr. Pats.* (DC Dist. Col. 1958, 168 F. Supp. 844; aff'd 124 USPQ 358), it was held that an action of this type is not simply a technical appeal from the Commissioner's decision, but is a civil action requiring a trial *de novo*. Accordingly, the fact that a contention was not made in the Patent Office does not preclude the Appellant from making and proving it at the trial in the District Court. Appellant's product is not pasteurized. The term simply has no relation to face creams.

The Appellee urges on page 7 of its brief that the chemist, Justin Deal, admitted that he was not an expert on pasteurization. We submit that the accusation is unfair. The witness has been a graduate chemist for about thirty years and has been employed mostly in the pharmaceutical field (28A). As he stated, he consulted various sources and noted that pasteurization consists of the heating of material to eliminate bacteria. This hardly requires the attention of an "expert" on pasteurization *per se.* Further, the question of whether "Pasteurized" can be a trademark for face creams requires a consideration of face creams rather than of pasteurization broadly.

The Appellee quotes Mr. Deal's testimony to the effect that the cream is heated up to 130 or 150 degrees F. The Appellee ignored the redirect examination on pages 30A and 31A that this heating step was a routine procedure employed in the majority of face creams for emulsifying the ingredients. Accordingly, as was pointed out on pages 14 and 15 of our main brief, this has nothing to do with pasteurization.

On page 9 of the Appellee's brief, he contends that a face cream could contain raw milk, and that this milk would be pasteurized as the product was emulsified. We respectfully reiterate that the contention is absurd. Why in the world would one want to pasteurize any milk which was contained in a face cream? The user will neither eat nor drink the product, and certainly not the milk that the Appellee argues might be in the cream. For example, we understand that in the production of certain plastics, milk might be used for its casein constituent. Obviously, it could not be contended that the plastic had been pasteurized when its ingredients are heated in the course of production.

In footnote 4 on page 9 of Appellee's brief, it states that the above facts are clearly distinguishable from the "Cultured" milk involved in the case of *In re De-Raef Corp., supra.* However, Appellee does not undertake to distinguish the case, either clearly or unclearly, and we submit that he cannot do so.

On page 11, footnote 5, of the Appellee's brief, he complains of numerous inaccuracies in the Appellant's brief regarding the "Glass Wax" case. He does not point out any such inaccuracies, and we know of none. We think it enlightening, however, to point out that the Appellee emphasizes statements found in the text of the opinion, but it avoids the "Amendment to Opinion" which is found at 129 F. Supp. 940 where the Court states that it wished to make its findings unmistakably clear. The Appellee apparently prefers the unclear version. The fact is that the mark "Glass Wax" was held registrable for all the reasons set forth at the end of the opinion. These contentions were made in our main brief and the Appellee has been unable to distinguish the cases.

Notably, the Appellee points out footnote 5, pages 11 and 12 of his brief that the Examiner eventually allowed "Glass Wax" as a trademark after he found the evidence of secondary meaning sufficient. Accordingly, "Pasteurized" should be allowed to the Appellant because such secondary meaning evidence was produced in the District Court in addition to that submitted to the Examiner. This courtroom evidence should further be more persuasive than mere ex parte affidavits. The critical point we submit, is that all deponents and witnesses testified to exclusivity of the term "Pasteurized", the exclusive association of "Pasteurized" with the Appellant, and the long continued promotion of "Pasteurized" Face Cream by the Appellant alone. Surely, the mark means a Helena Rubinstein product and to deny it adequate registration is to be arbitrary and unmindful of the 2(f) statute.

On pages 21 and 27 of its brief, Appellee relies on the case of *Roselux Chemical Co. Inc.* v. *Parsons Ammonia Co. Inc.*, 49 C. C. P. A. 931, 299 F. 2d 855. In that case, however, as was pointed out at 299 F. 2d 863, others were using the disputed term "Sudsy" descriptively on the same or similar products. This critical aspect is not found here. Only the Appellant uses, or has the right to use, the term "Pasteurized" in the incongruous setting shown.

On page 14 of the Appellee's brief, it contends that the Appellant's mark "Pasteurized" has not been displayed without prominent display of the name "Helena Rubinstein". This contention is of little relevance. It is well known that a "house mark" very often accompanies a specific trademark as, for example, "Chanel No. 5" or "Seagram's 7 Crown". In the case of *Frances Denney* v. *Elizabeth Arden Sales Corp.*, 46 C. C. P. A. 790, 263 F. 2d 347, 120 U. S. P. Q. 480, it was found that the advertisements of both litigants featured their respective house marks in conjunction with the marks in issue, but that there was no evidence that these house marks identified the particular cosmetics. It stated that in an application for registration, whether or not a mark is used with an associated house mark is not controlling.

On pages 26 and 27 of the Appellee's brief, it complains that much of the testimony relating to matters "other than fact" was obtained by the use of extremely leading questions. Incomprehensibly, the Appellee then points to its "warning" on the trial, that it would make no objections to such testimony in view of the fact that there was no jury and the District Judge would evaluate the testimony. We cannot comprehend just what that argument is supposed to mean, but in any event, it seems to be self-defeating.

We submit that the Appellee has been unable to refute the clear position of the Appellant and proceeds to distort the testimony as well as the law in what should be a most simple controversy.

We reaffirm that the Appellant is entitled to registration pursuant to Section 2(f) of the Lanham Act. To deny registration to the Appellant is to ignore reality, *i.e.* that "Pasteurized" means, in relation to face creams, a product of the Appellant.

Respectfully submitted,

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JOINT APPENDIX

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 18,074

9/6

HUDSON FOAM PLASTICS CORPORATION,

Appellant,

v.

DAVID L. LADD,
Commissioner of Patents,

Appellee.

Appeal from the Judgment of the United States District Court
for the District of Columbia

United States Court of Appeals
for the District of Columbia Circuit

FILED OCT 10 1963

Nathan J. Paulson
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United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 18,074

HUDSON FOAM PLASTICS CORPORATION,
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Appeal from the Judgment of the United States District Court
for the District of Columbia

JOINT APPENDIX

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JOINT APPENDIX

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

HUDSON FOAM PLASTICS CORPORATION
309 River Road
Edgewater, New Jersey,
Plaintiffs,

vs.

DAVID L. LADD,
COMMISSIONER OF PATENTS,
Washington 25, D. C.,
Defendant.

Civil Action No. 2763-61

DOCKET ENTRIES

Date	Proceedings	
1961		
Aug. 21	Complaint, appearance	filed
Aug. 21	Summons, copies (3) and copies (3) of Complaint issued deft ser. 8-22-61; U.S. Atty ser. 8-22-61; Atty Gen. ser. 8-24-61	
Oct. 10	Answer of deft to complaint; c/m 10-9-61. Appearance of C. W. Moore.	filed
Oct. 10	Calendared (N)	
1963		
Jan. 8	Interrogatories of pltf. to deft; c/m 1-8-63.	filed
Jan. 23	Response of deft. to interrogatories; c/m 1-23-63.	filed
Feb. 12	Trial begun; and concluded; briefs to be exchanged within 20 days after receipt of transcript together with proposed findings of fact and conclusions of law and order. (N) Jackson, J.	
Mar. 8	Brief of deft.	filed
Mar. 8	Brief of pltf.	filed

Date	Proceedings
1963	
Mar. 8	Transcript of proceedings Feb. 13, 1963. (reported by Jack Maher.) filed
Mar. 8	Opinion dismissing complaint. (N) Jackson, J.
Mar. 8	Order dismissing complaint with costs against pltf. (N) Jackson, J.
Mar. 11	Brief of pltff after trial; c/s 3-11-63. filed
Mar. 13	Order vacating judgment entered 3-8-63; (N)Jackson, J.
Mar. 19	Plaintiff's reply to brief for deft. filed
Mar. 27	Order granting judgment for deft; dismissing complaint with costs against pltff. (N) Jackson, J.
Mar. 27	Trial brief for pltff. filed
May 27	Notice of Appeal by pltff copy mailed to C. W. Moore; Deposit by Fisher, $5.00. filed
June 3	Cost bond on appeal of pltf. with Glens Falls Insurance Co. in the sum of $250.00, approved and filed. Pine, J.
June 28	Exhibits 1, 2, 5, 6, 7 of pltf. filed
June 28	Transcript of proceedings 2-12-63, pp 124. (Reported by Jack Maher, pltf's copy.) filed
June 28	Order extending time for docketing and filing record on appeal until August 26, 1963. (N) Pine, J.
July 1	Exhibits 3, 4, 8, 9, 10, 11, 12, 15, 16 & 17 of pltf. filed.
July 10	Exhibits 13 & 14 of pltfs filed.

[Filed Aug. 21, 1961]

COMPLAINT FOR LETTERS PATENT

To the Honorable District Judges of the United States District Court for the District of Columbia:

1. This is an action brought to obtain a patent, filed in accordance with the provisions of the laws of the United States as provided under 35 U.S. Code, Sec. 145.

2. Plaintiffs, HUDSON FOAM PLASTICS CORPORATION, is a corporation duly organized and existing under and by virtue of the laws of the State of New York and having a principal place of business at Edgewater, New Jersey.

3. The defendant, David L. Ladd, is Commissioner of Patents of the United States, and by virtue of his office is a resident of the District of Columbia and is sued as Commissioner of Patents of the United States.

4. On or about July 2, 1954, Christopher L. Wilson and Oscar Shuffman executed an application for United States Letters Patent on an invention entitled "FOAMED POLYESTER RESIN LAMINATED PRODUCTS", and on or about (~~September~~ July) 8, 1954, said application was filed in the United States Patent Office and was given Serial Number 441,984, all in accordance with the patent laws of the United States and the rules of the Patent Office. R.J. 2/12/63

5. On or about July 6, 1954, said Christopher L. Wilson and Oscar Shuffman assigned to Hudson Foam Plastics Corporation all their right, title and interest in and to the invention of said application and in and to any patent or patents granted thereon.

6. Said application, Serial Number 441,984, has been duly prosecuted in accordance with the rules of the United States Patent Office.

7. The Examiner in charge of said application, Serial number 441,984, has refused to allow the following claim:

(Claim 28 of application Serial No. 441,984) – A method of making a molded laminated product comprising lining the inner surface of a mold with a film consisting essentially entirely of a resin selected from the group consisting of polyvinyl chloride resin and curable polyester resin, partially filling the mold with a reaction mixture of (1) a polyester resin derived from a polycarboxylic acid and a polyhydric alcohol, (2) an organic diisocyanate, (3) water, and (4) a tertiary amine catalyst; allowing said mixture to react to form a resilient foamed body within said mold and allowing said foamed body to cure and to bond to said film.

8. In the prosecution of application, Serial Number 441,984, before the Examiner, Claims 19, 20 and 26 were allowed. Claim 27 and

Claim 28, set forth in above paragraph 7, were finally rejected by the Examiner and appeal was duly noticed and filed from the decision of the Examiner to the Board of Appeals. On June 22, 1961, the Board of Appeals reversed the Examiner with respect to the rejection of Claim 27, but affirmed the decision of the Examiner and entered its final decision sustaining the rejection of Claim 28 of the aforesaid application 441,984.

9. The Commissioner of Patents has refused and now refuses to allow Claim 28 of said application 441,984 set forth in Paragraph 7 hereof, as will more fully appear from a certified copy of said application Serial Number 441,984 and of the proceedings in the Patent Office ready here in court to be produced and of which proffert is hereby made. No appeal has been taken to the United States Court of Customs and Patent Appeals from the decision of the Board of Appeals in this case, but plaintiffs have elected and do elect to proceed under 35 U.S. Code, Sec. 145 as hereunto set forth in paragraph 1 of this complaint.

WHEREFORE plaintiffs pray that this Honorable Court adjudge that they are entitled according to law to receive a patent for the invention or inventions as specified in said claim 28 forming part of paragraph 7 hereof, and that the Commissioner of Patents be authorized and enjoined to issue to the plaintiffs a patent or patents in accordance with the decree of this Court upon filing in the Patent Office a copy of said decree and otherwise complying with the requirements of law.

HUDSON FOAM PLASTICS CORPORATION

Fisher, Christen & Goodson

By /s/ Martin T. Fisher
Their Attorneys

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[Filed Oct. 10, 1961]

ANSWER TO THE COMPLAINT

To the Honorable the Judges of the United States District Court for the District of Columbia

1, 2. The defendant admits the allegations of paragraphs 1 and 2 of the complaint.

3. The defendant admits that he is Commissioner of Patents of the United States and is sued as Commissioner of Patents of the United States. The defendant denies that by virtue of his office he is a resident of the District of Columbia.

4. Except for denying that application Serial No. 441,984 was filed on or about September 8, 1954, the defendant admits the allegations of paragraph 4 of the complaint.

5, 6, 7, 8, 9. The defendant admits the allegations of paragraphs 5, 6, 7, 8 and 9 of the complaint.

FURTHER ANSWERING, the defendant asserts that the plaintiff is not entitled to a patent containing claim 28 of the application involved in this civil action for the reasons given and in view of the patent to Simon et al, No. 2,639,252, granted May 19, 1953, cited in the Examiner's Answer, the Supplemental Examiner's Answer and the decision of the Board of Appeals in that application. Profert hereby is made of copies of said Answers, decision and reference.

Respectfully submitted,

/s/ C. W. Moore
Solicitor, United States Patent Office

[Certificate of Service]

[Filed Jan. 8, 1963]

EXCERPTS FROM PLAINTIFF'S INTERROGATORIES

To: C. W. Moore, Solicitor
United States Patent Office
Washington 25, D. C.

Plaintiff propounds the following interrogatories to Defendant to be answered by Defendant under oath in accordance with Rule 33 of the Federal Rules of Civil Procedure.

* * * * *

2. Identify each and every piece of prior art in the form of patents, publications, or otherwise, upon which Defendant will rely at the trial to support its assertion that Plaintiff is not entitled to a patent containing Claim 28.

* * * * *

HUDSON FOAM PLASTICS CORPORATION
By: /s/ Martin T. Fisher
Fisher, Christen, Sabol & Caldwell

* * *

DATED: January 8, 1963

OF COUNSEL:

Morgan, Finnegan, Durham & Pine
Hobart N. Durham, Esq.
John D. Foley, Esq.

* * *

[Filed Jan. 23, 1963]

EXCERPTS FROM DEFENDANT'S RESPONSE TO INTERROGATORIES

In accordance with the provisions of Rule 33 of the Federal Rules of Civil Procedure, and the Stipulation of January 10, 1963, the defendant, David L. Ladd, by counsel, submits the following answers to the Interrogatories served on January 8, 1963.

* * * * *

2. Defendant presently intends to rely upon United States Patent No. 2,639,252 to Simon et al as prior art.

* * * * *

Respectfully submitted,

/s/ C. W. Moore
Solicitor, United States Patent Office
Attorney for Defendant

January 23, 1963

[Certificate of Service]

[Filed Mar. 8, 1963]

EXCERPTS FROM TRANSCRIPT OF PROCEEDINGS

1 Washington, D. C.
Tuesday, February 12, 1963.

The above-entitled cause came on for trial at 10:00 a.m. before the HONORABLE JOSEPH R. JACKSON, Senior Judge, United States District Court.

APPEARANCES:

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MARTIN FISHER, ESQ.
Washington, D. C.

On behalf of the defendant:

JACK E. ARMORE, ESQ.
Solicitor's Office,
U. S. Patent Office.

* * * * *

3

EXHIBITS

Defendant's		Marked for Identifica'n	Rec'd in Evidence
No. 1	Patent Office File E. Simon et al reference with Tabs A - E.	9 (JA 10)	9 (JA 10)
No. 2	H. Van Swaay Patent No. 2,759,475.	66 (JA 33)	68 (JA 34)
No. 3	German Patent No. 860,109 with translation.	68 (JA 34)	74 (JA 37)
No. 4	G.C. Sullivan Patent No. 2,753,642.	115 (JA 62)	(Reserved See Page 117) (JA 62)
Plaintiff's			
No. 1	Certified File Wrapper & Contents Serial #441984.	10 (JA 10)	10 (JA 10)
No. 2	U.S. Patent No. 2,961,418 Wilson & Shuffman.	31 (JA 11)	31 (JA 12)
No. 3	Specimen of polyester based polyurethane foam. (Laboratory)	33 (JA 12)	34 (JA 13)
No. 4	Specimen same as Ex. 3 only machine manufactured.	34 (JA 13)	35 (JA 14)
No. 5	U.S. Patent No. 2,676,157 Isaac L. Newell.	38 (JA 15)	38 (JA 16)
No. 6	U.S. Patent No. 2,763,624 Isaac L. Newell.	38 (JA 15)	38 (JA 16)
No. 7	Appendix from Pretrial Brief Definitions of Terms Which May be Used at the Trial.	42 (JA 18)	42 (JA 18)
No. 8	Mold used in demonstration.	48 (JA 21)	123 (JA 65)
No. 9	Paper cup with foam prepared according to Example 6 of Patent #2,961,418.	52 (JA 24)	53 (JA 25)
No. 10	Glass beaker with foam prepared as per Ex. 9.	53 (JA 25)	123 (JA 65)
No. 11	Composite prepared as per Ex. 9 and cured.	54 (JA 25)	55 (JA 26)
No. 12	Composite as per Ex. 11	57 (JA 27)	58 (JA 28)
3-A No. 13	Specimen of polyurethane foam for vibration tests.	75 (JA 38)	76 (JA 38)
No. 14	Specimen of rigid polyurethane foam.	76 (JA 39)	77 (JA 39)
No. 15	Paper cup with rigid polyurethane foam per Example IX of Simon Patent.	82 (JA 42)	83 (JA 43)
No. 16	Similar to Ex. 15 only smaller for testing purposes.	83 (JA 43)	84 (JA 43)
No. 17	Polyurethane foam fr Ex. 16 poured into mold of fibre-glass reinforced resin.	85 (JA 44)	85 (JA 44)

* * * * *

5 * * * * *

THE COURT: Has the rejection been on prior art?

MR. DURHAM: The rejection has been on one prior patent. There is also -- not specifically -- a separate ground of rejection -- but almost equivalent to it -- in that the Board of Appeals said that the term resilient and the term rigid were not sufficiently definite so that resilient would distinguish over the term rigid.

THE COURT: Well, it appears to me they are an antithesis.

MR. DURHAM: I think the Patent Office will argue to the contrary, and I think, certainly, the Board took a contrary position.

THE COURT: Very well.

MR. DURHAM: Just so Your Honor can have some familarity with the subject matter of this case even beyond the definitions of the terms which we included in our pretrial brief, I would like to hand up just two samples, of resilient foam and rigid foam, so that Your Honor can inspect those. Those will be offered in evidence and properly identified
6 early in the trial.

THE COURT: These things, of course, just bear out what I have just said.

* * * * *

8 THE COURT: I assume, Mr. Armore, you wish to offer your exhibit out of order?

MR. ARMORE: Yes, Your Honor, I do. I have the defendant's ringed binder of exhibits which I would like to offer at this time.

* * * * *

THE COURT: Very well, it will be marked.

MR. ARMORE: Through letters A to E.

9 THE COURT: Do you want these tabs marked separately by letters?

MR. ARMORE: The Exhibit has the lettered tabs A through E.

THE COURT: The whole thing is being offered. Why not Exhibit 1? Go ahead.

THE DEPUTY CLERK: Defendant's Exhibit Number 1.

(Defendant's Exhibit Number 1 was marked and received in evidence.)

* * * * *

MR. ARMORE: May I request plaintiff's counsel to offer the record of the Patent Office file?

MR. DURHAM: I understand that we have an agreement that the complaint may be amended to correct the filing date so it reads July 8, 1954.

MR. ARMORE: The complaint may be amended, yes.

* * * * *

10 MR. DURHAM: I offer a certified copy of the file wrapper and contents of Patent Application of Christopher L. Wilson and Oscar Shuffman, assigned to Hudson Foam Plastics Corporation, the plaintiff here, serial number 441984, filed July 8, 1954.

THE COURT: It may be received in evidence.

THE DEPUTY CLERK: Plaintiff's Exhibit No. 1.

(Plaintiff's Exhibit No. 1 was marked and received in evidence.)

* * * * *

29 OTTO ZIEMANN

was called as a witness by and on behalf of the plaintiff and, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. DURHAM:

Q. Mr. Ziemann, will you state your name, age and residence? A. My name is Otto Ziemann, 27 years of age, and I live at 63 Orangeburg Road, Old Tappan, New Jersey.

Q. What is your present occupation? A. I am currently employed as a research chemist for Hudson Chemical Corporation.

Q. Can you tell us what relation that chemical corporation has to the plaintiff here? A. Yes, it is an affiliate.

Q. What are your duties with the Hudson Chemical Corporation? A. At present I am primarily concerned with research and development of polyurethane foams; and elastomers as well.

Q. What has been your schooling since high school? A. Well, I
30 graduated from Brooklyn Polytechnical Institute in 1942 with a Bachelor of Science and Chemical Engineering.

Q. When did you start your college studies? A. My college studies were started approximately in the year 1953.

Q. And what has been your employment since high school? A. Since high school I have worked for my present employer and also for the United States Plywood Corporation. In that aspect I was employed as a technician at that time for the research and development department.

Q. That is a chemical technician? A. Chemical technician, yes.

Q. Have you had any special experience in connection with polyurethane foams? A. Yes, I have.

Q. Would you tell us in general what that has been and over what period? A. Approximately August of 1958 until now. Initially I was employed as a technician with my primary responsibility at that time in producing polyurethane products as well as physical testing of the products. In 1960 I became a chemist in research and development of polyurethane foams and I am currently doing that now. And in addition, I generally fill in for supervisory people in the production department in
31 the actual manufacture of polyurethane foams on a commercial basis when they happen to be away, for example, on vacation or if they are ill, et cetera.

Q. I show you a copy of United States Patent 2,961,418 granted on an application serial number 420,744. I will ask that it be marked as plaintiff's exhibit 2 for identification first.

THE DEPUTY CLERK: Plaintiff's Exhibit No. 2 for Identification.

(Plaintiff's Exhibit No. 2 was marked for identification.)

BY MR. DURHAM:

Q. Do you have a copy of that? A. No, I don't.

Q. Are you familiar with that patent? A. Yes, I am.

THE COURT: How is it entitled?

MR. DURHAM: Cellular Polyesterurethane Product and Preparation of Same, filed in the names of Christopher L. Wilson and Oscar Shuffman.

THE COURT: Have you any obejction, Mr. Armore?

MR. ARMORE: No objection.

THE COURT: There being no objection, it may be received in evidence and marked.

(Plaintiff's Exhibit No. 2 was received in evidence.)

32 MR. DURHAM: I might say to clarify the record that is the patent that was granted on the application referred to at page 1 of the application here in suit.

BY MR. DURHAM:

Q. Mr. Ziemann, have you made all or any of the examples described and set forth specifically in the patent, plaintiff's exhibit number 2? A. Yes.

Q. When? A. Approximately, March, 1962. I prepared all of the polyesters and all of the foams in each example of that patent.

Q. And have you subsequent to that time prepared other samples? A. Yes.

Q. In accordance with that patent? A. Yes.

Q. Are you familiar with the application of Wilson and Shuffman here in suit of which I have offered a certified copy as plaintiff's exhibit number 1? A. Yes.

MR. DURHAM: I will ask that a 7-inch square of white material be marked for identification as plaintiff's exhibit number 3.

THE DEPUTY CLERK: Plaintiff's Exhibit No. 3 marked for identi-

33 fication.

* * * * *

(Plaintiff's Exhibit No. 3 was marked for identification.)

BY MR. DURHAM:

Q. Mr. Ziemann, I show you a specimen, which is plaintiff's exhibit 3 for identification. Do you know the history of that specimen? A. Yes.

Q. Would you tell us what it is? A. That is a polyester based polyurethane foam which I prepared myself in the laboratories of Hudson Chemical Company.

Q. And about what time? A. Last week. February 8th, approximately.

Q. What kind of a foam is that generally known as? A. That is a substantially linear polyester foam.

Q. And is it commonly known as resilient or rigid? A. This is definitely a resilient yielding foam.

MR. DURHAM: I will offer that in evidence.

* * * * *

34 THE DEPUTY CLERK: Plaintiff's Exhibit No. 3.

(Plaintiff's Exhibit No. 3 was received in evidence.)

MR. DURHAM: I will ask that this be marked.

THE DEPUTY CLERK: Plaintiff's exhibit number 4 for identification.

(Plaintiff's Exhibit No. 4 was marked for identification.)

BY MR. DURHAM:

Q. I show you another similar square of material which has been marked plaintiff's exhibit 4 for identification and ask you if you can tell us the history and nature of this material? A. That is an analogous material to the one I just spoke about, only it possesses the same composition excepting it was made on a commercial machine. It also is a resilient yielding polyester based polyurethane foam.

Q. I notice that plaintiff's exhibit 4 is somewhat different in its surface material from the appearance of plaintiff's exhibit 3. How do you account for that difference? A. On a laboratory scale one generally

doesn't get as fine and uniform a cell structure because of inherent
35 differences in mixture. In mixing much you generally get a considerable amount of air into the foam which doesn't dissipate.

MR. DURHAM: I will offer this as plaintiff's exhibit 4 in evidence.

* * * * *

THE DEPUTY CLERK: Plaintiff's Exhibit No. 4.

(Plaintiff's Exhibit No. 4 was received in evidence.)

MR. DURHAM: At this point I would like to interrupt Mr. Ziemann's testimony. We wish to perform two demonstrations and the nature of the materials to be used makes it rather tedious to carry on the weighing operations. I think rather than wasting the time by dragging out the testimony during that period we might more efficiently ask Mr. Ziemann to proceed with the weighing operations. And while he is doing that I will have Mr. Newell testify during the interval that he is proceeding with the weighing operations.

* * * * *

36 Thereupon --

ISAAC L. NEWELL

was called as a witness by and on behalf of the plaintiff and, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. DURHAM:

Q. Mr. Newell, will you please state your name, age and residence? A. Isaac L. Newell, 62 years, reside Wethersfield, Connecticut.

Q. And what is your present position and occupation? A. I am president of the Henry Souther Engineering Company and a consultant engineer.

Q. And are you in any particular field of consulting work? A. In the field of chemistry.

Q. Would you tell us your schooling since high school? A. I graduated from Trinity College, Hartford, Connecticut, with a Bachelor of Science Degree in 1925 and received a Master of Science Degree from Trinity College in 1930.

Q. Are you a member of any scientific societies? A. Yes, I am a member of the National Society of Professional Engineers; I am a member of the American Chemical Society, American Institute of
37 Chemical Engineers and American Society for Testing Materials, and American Oil Chemist Society; and many others.

Q. What has been your employment since college? A. Directly after graduating I went to the Henry Souther Engineering Company as a technician or chemist and remained with that company ever since. I have been a research chemist, vice-president and more recently president; and I have been a consultant in the field since about 1935.

Q. Would you name just two or three typical clients of your company? A. Yes, our clients include companies like General Motors, United Aircraft Corporation and American Brass Company.

Q. Have you had any particular experience in the field of polyurethane resins? A. Yes, I have.

Q. Would you detail this briefly for us? A. In the late 1940's I was engaged by a company to do development work in the field of polyurethane foams in order to produce a strong rigid structure for aircraft purposes. And that has continued since that time up to the present time.

Q. Do you hold any patents in this particular field? A. I do.

38 MR. DURHAM: I will ask that these be marked.

THE DEPUTY CLERK: Plaintiff's Exhibits 5 and 6 marked for identification.

(Plaintiff's Exhibits No's 5 and 6 were marked for identification.)

BY MR. DURHAM:

Q. I show you a copy of United States Patent Number 2,676,157 in the name of Isaac L. Newell, assignee United Aircraft Corporation, which is marked as plaintiff's exhibit 5 for identification, and I ask you if that is one of your patents? A. It is.

Q. I also show you plaintiff's exhibit 6 for identification, which is a copy of Patent 2,763,624 in the name of Isaac L. Newell, assignor to United Aircraft Corporation, and ask if that is another of your patents? A. It is.

MR. DURHAM: I will ask that both of these be received in evidence.

* * * * *

THE DEPUTY CLERK: Plaintiff's Exhibits 5 and 6.

(Plaintiff's Exhibits No's. 5 and 6 were received in evidence.)

39 BY MR. DURHAM:

Q. Mr. Newell, what is your relation to the plaintiff in this case, if any? A. I have just been engaged by them recently to appear in this action.

Q. Have you personally carried out any experimental work in connection with the present litigation? A. I have.

Q. And previous to your work on this case, had you actually performed any of the physical manipulations in the preparation of polyurethane foams yourself, or had that been done by others for you? A. In previous years, many years back, I performed many of the operations in the preparation of the foams myself.

Q. Do you have a copy of the patent Simon, et al., 2,639,252, with you, which is part of defendant's exhibit number 1, being marked Part A? A. I do.

Q. Are you familiar with that patent? A. I am.

Q. Prior to this litigation had you been familiar with any of the
foams which are disclosed in the Simon Patent, defendant's exhibit 1,
part A? A. I am not positive that the exhibits of this particular patent
40 were known to me, but four Simon Patents were cited against me
during the getting of the patent, Exhibit 5, back in 1954, so I am familiar
with many of the Simon Patents. I am very familiar with this one because of my recent study of it.

THE COURT: Can you tell by the number? I see the numbers of these four Simon Patents cited against you.

THE WITNESS: No, this one was not cited against me.

BY MR. DURHAM:

Q. Do you recall, Mr. Newell, whether the formulations in the ones which were cited bore some semblance or not to the defendant's exhibit 1, part A? A. Yes, basically the Simon Patents are polyesters with polyisocyanates.

Q. How many years have you been engaged in the general field of plastics apart from the specific field of polyurethane foams? A. Twenty or twenty-five years.

Q. And did you tell us how long you had been working on polyurethane foams? A. Since the late 1940's. I would say more than ten years.

Q. Have you studied and do you understand the specification of the application here in suit? A. I do.

41 Q. And I ask you the same question with respect to the patent to Wilson and Shuffman, number 2,961,418, which is plaintiff's exhibit 2? A. I have studied that.

Q. Do you have copies of those in front of you? A. I do.

Q. Mr. Newell, in the appendix to our pretrial brief there are a group of definitions of various chemical terms which will probably occur during the trial. Did you have the opportunity to review those before the brief was filed? A. I did.

Q. And would you tell us whether or not you approve of those definitions? A. Yes, I agree with the definitions as printed in the pretrial brief.

MR. DURHAM: Your Honor, am I correct that the pretrial brief is not part of the record?

THE COURT: That is true.

MR. DURHAM: Then I think it might be well to offer these as an exhibit by themselves.

* * * * *

42 THE COURT: Very well, it may be received in evidence and marked.

THE DEPUTY CLERK: Plaintiff's Exhibit No. 7.

(Plaintiff's Exhibit No. 7 was marked and received in evidence.)

BY MR. DURHAM:

Q. Mr. Newell, would you give us a brief general description of the physical acts and the routine of preparing a polyurethane foam of the polyester type from its resin and the other ingredients? Not going back to the preparation of the resin, but starting with the alkyd resin, which is already prepared. A. The foam formula is first examined and the polyester resin is first weighed out and put in the receptacle with which it is to be mixed with the other ingredients. Following that the proper amount of water is added as indicated in the formula and any

43 accelerators which are to be added are weighed out and added; and the whole polyester base then with the other ingredients is mixed. When the mixture appears to be homogeneous the polysiocyanate is weighed out or measured and added at one time, and then the polyester and the mixture with the di-isocyanate are rapidly mixed until foaming starts and then poured into whatever container is desired to have the foam finished and cured.

THE COURT: It is time now for the usual morning recess.

Will the recess at this time interfere with the demonstrations being prepared?

MR. DURHAM: No, I think we may gain time by it.

THE COURT: Very well, Court stands recessed until 11:30.

(Whereupon, at 11:15 a.m. the Court recessed and reconvened at 11:30 a.m.)

BY MR. DURHAM:

Q. Mr. Newell, just one question before we turn to the demonstration. Do you happen to know of your own knowledge when resilient foams came to be in use; resilient polyurethane foams? A. Only in recent years, in the 1950's.

Q. And can you place it any more accurately than that when you first became familiar with them? A. I first became familiar with them

44 in 1955 and '56.

MR. DURHAM: We are ready now to proceed with the demonstration. Can Your Honor see from there?

THE COURT: Well, if I can't I will walk down there. I think probably that will be better anyhow.

* * * * *

(Whereupon, The Court, counsel and witnesses Ziemann and Newell proceeded to a table near the wall of the courtroom on which various demonstration materials were placed.)

MR. DURHAM: Mr. Ziemann, you have been weighing and preparing the different ingredients for the demonstration while Mr. Newell has been testifying; is that correct?

WITNESS ZIEMANN: Yes, sir.

MR. DURHAM: Would you tell us what demonstration you intend to perform and what you have been doing?

WITNESS ZIEMANN: First, I intend to perform the Example 6 in U.S. Patent 2,961,418, and in order to do that --

THE COURT: What patent is that? Identify it by name. Is it the Simon Patent?

MR. DURHAM: The Wilson and Shuffman Patent.

THE COURT: Identify it by name and also by number.

MR. DURHAM: Plaintiff's Exhibit 2.

45 WITNESS ZIEMANN: And in order to do that I have weighed out 30 grams of polyester resin, .52 cc's of water, .5 cc's of sodium ricinoleate solution and .6 cc's of collidine.

THE COURT: Where is that?

WITNESS ZIEMANN: That is added in this beaker and all of these components were mixed up for 2 minutes.

MR. DURHAM: Mr. Ziemann, am I correct, that in front of you are the various supply bottles of the different ingredients that you have just referred to?

WITNESS ZIEMANN: Yes.

MR. DURHAM: Together with a scale and other apparatus on which you measured the amounts?

WITNESS ZIEMANN: Yes.

In addition, I also pre-measured 7 and 1/2 cc's technical toluene di-isocyanate and I am prepared to make the foam now.

MR. DURHAM: Will you proceed. I will ask Mr. Newell to comment on the procedure that Mr. Ziemann is carrying out at the moment.

MR. ARMORE: Your Honor, I think I am going to object to the procedure.

THE COURT: Why?

MR. ARMORE: It seems to be an alternate examination of two witnesses rather than one or the other.

46 THE COURT: Well, if it is an objection it is overruled. The Court is anxious to know how and why this is done; and we have no jury, you know.

WITNESS NEWELL: The toluene di-isocyanate is a thin liquid and the polyester resin is a viscous material and it is necessary to stir these vigorously and rapidly in order that the two shall mix.

THE COURT: As shown in the beaker now?

WITNESS NEWELL: As shown in the beaker now. Now he has stopped the mixing after 2 minutes and then the foam mix immediately starts and the head is developed there. I think if you feel it you will find the mixture has become warm. This starts the curing action as well as the foam in addition to the formation of gas which forms the foam itself.

MR. DURHAM: Mr. Ziemann, how long has that been proceeding by your stop watch?

WITNESS ZIEMANN: I am not timing it but approximately 30 seconds to a minute.

MR. DURHAM: What is the appearance now of the foam?

WITNESS NEWELL: Well, the foam is still expanding and it will continue to do so until the di-isocyanate has completely reacted with the water which forms the carbon dioxide gas which is there; and I would say that it was very nearly completed. The temperature hasn't risen very much more.

47 THE COURT: Will it rise higher?

MR. NEWELL: The foam will not rise higher.

THE COURT: I didn't ask that.

MR. NEWELL: The temperature will not.

THE COURT: That is what I was talking about, the temperature.

WITNESS NEWELL: The curing will start and the rate of curing will depend upon the temperature, and so we will get some curing action during the reaction that is taking place now. There seems to be no more rise.

THE COURT: This is the experiment that you performed?

WITNESS NEWELL: I performed many experiments like this.

THE COURT: Did you perform this one?

WITNESS NEWELL: I have performed one like it.

THE COURT: You are interpreting this then from the testimony that has been given by the other witness?

WITNESS NEWELL: Yes, sir, and my own observation.

I think it has reached its peak now of foam expansion.

MR. DURHAM: Would you estimate the height to which the foam has risen over the top of the glass beaker?

WITNESS NEWELL: An inch or an inch and a half.

MR. DURHAM: I think now we can proceed to the mixing of the 48 of the other batch of polyurethane resin which is to be placed in a mold which has been previously lined with a film.

I will ask Mr. Ziemann to tell us how he has lined the mold which appears here and which I will ask that it be marked in evidence for identification.

THE DEPUTY CLERK: It should be plaintiff's exhibit number 8.

(Plaintiff's Exhibit No. 8 was marked for identification.)

WITNESS ZIEMANN: That mold was lined in the following manner: First, the mold was coated with a molded release agent and permitted

WITNESS ZIEMANN: Yes.

In addition, I also pre-measured 7 and 1/2 cc's technical toluene di-isocyanate and I am prepared to make the foam now.

MR. DURHAM: Will you proceed. I will ask Mr. Newell to comment on the procedure that Mr. Ziemann is carrying out at the moment.

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THE COURT: This is the experiment that you performed?

WITNESS NEWELL: I performed many experiments like this.

THE COURT: Did you perform this one?

WITNESS NEWELL: I have performed one like it.

THE COURT: You are interpreting this then from the testimony that has been given by the other witness?

WITNESS NEWELL: Yes, sir, and my own observation.

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MR. DURHAM: Would you estimate the height to which the foam has risen over the top of the glass beaker?

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I will ask Mr. Ziemann to tell us how he has lined the mold which appears here and which I will ask that it be marked in evidence for identification.

THE DEPUTY CLERK: It should be plaintiff's exhibit number 8.

(Plaintiff's Exhibit No. 8 was marked for identification.)

WITNESS ZIEMANN: That mold was lined in the following manner: First, the mold was coated with a molded release agent and permitted to dry. Then we brush-coated on a polyvynl chloride plastisol 77 x 200, which is a commercial product manufactured by Stanley Chemical Company. We then placed that --

MR. DURHAM: What kind of material is that, if you know?

WITNESS ZIEMANN: I say it is a polyvynl chloride plastisol.

MR. DURHAM: Not a copolymer?

WITNESS ZIEMANN: No, it is not a copolymer.

After we brush-coated the film on we placed it in an oven maintained at approximately 180 to 200 degrees Centigrade for about 15 minutes and at about which time that film had cured to which you see it here.

49 We then peeled that coating from the mold so as to facilitate its release and then placed it back in the mold again so as to conform to the shape of the mold. And that is it.

MR. DURHAM: Now, would you proceed with the further demonstration using plaintiff's exhibit 8 for identification?

WITNESS ZIEMANN: I will have to move down this way a little bit.

THE COURT: What are you doing now?

WITNESS ZIEMANN: I have just added --

THE COURT: Turn off the gun for a minute.

WITNESS ZIEMANN: I have just added 25 milliliters of 65/35 toluene di-isocynate to the present mix.

THE COURT: You are doing what with it?

WITNESS ZIEMANN: I am mixing it again. It is beginning to foam so I quickly pour it into the mold, where it is now beginning to rise fairly rapidly.

MR. DURHAM: When you were doing the mixing you were using an electric drill with an approximately 1-inch mandril on it immersed in the reactant mixture?

WITNESS ZIEMANN: Yes, I was.

The foam is still rising after approximately one minute.

MR. DURHAM: Mr. Ziemann, what is the color of the foaming
50 mixture?

WITNESS ZIEMANN: Substantially white.

MR. DURHAM: Would you tell us what remains to be done to the object in the mold, plaintiff's exhibit 8 for identification, after the foaming has ceased?

WITNESS ZIEMANN: The last thing is to cure the composite structure.

MR. DURHAM: And how do you cure such a foam?

WITNESS ZIEMANN: Normally we would cure it at approximately 70 to 80 degrees Centigrade. In this particular case it would probably take about 14 to 16 hours at least.

THE COURT: In the oven?

WITNESS ZIEMANN: Yes, sir, at that temperature.

I would say that is pretty much completed in its rise at this point. It took approximately 2 minutes; 2 minutes and 15 seconds to complete its rise.

MR. DURHAM: And in preparing this foaming mixture you have been following which example of the Wilson and Shuffman Patent, plaintiff's exhibit 2?

WITNESS ZIEMANN: Again, Example 6, except the batch was based on 100 grams of polyester resin instead of 30 as you see in the example.

MR. DURHAM: That is all, the quantities were increased by 3 and 1/3 times; is that correct?

WITNESS ZIEMANN: That is correct.

51 MR. DURHAM: I think we can resume the testimony now.

Mr. Newell, I think it may be better if we have Mr. Ziemann testify on the materials which he used.

(Whereupon, the demonstrations were completed and the Court returned to the Bench.)

THE COURT: Well, Mr. Ziemann may be recalled.

Thereupon --

OTTO ZIEMANN

was recalled as a witness and, having been previously duly sworn, was examined and testified further as follows:

DIRECT EXAMINATION

BY MR. DURHAM:

Q. Mr. Ziemann, who prepared the various raw materials which you have just used in your two demonstrations, or what was their source? A. I myself prepared them in the laboratory of the Hudson Chemical Corporation.

Q. And which one specifically did you so prepare? A. I prepared Example 6.

Q. Yes, but did you prepare the polyester resin? A. Yes, I prepared the polyester resin and I also prepared the wetting agent; and that is all which required preparation.

Q. And the toluene di-ioscynate? A. That is a commercial
52 material which was purchased from one of several manufacturers.

Q. And the collidine was also a purchased material? A. Either purchased or it was a sample.

Q. Do you have your laboratory notes with respect to the preparation of resin which you used as a starting material in your two demonstrations? A. Yes.

Q. Have you previously carried out the preparation of foams similar to the ones which you have just demonstrated to the Court? A. Yes.

MR. DURHAM: I ask that this be marked.

THE DEPUTY CLERK: Plaintiff's Exhibit Number 9 is marked for identification.

(Plaintiff's Exhibit No. 9 was marked for identification.)

BY MR. DURHAM:

Q. I show you a paper cut filled with a resilient foam which has been marked plaintiff's exhibit 9 for identification. Can you tell us if you know what that is? A. Yes, I do.

Q. What is it? A. That is a flexible, resilent polyester based polyurethane foam prepared according to Example 6 of the Wilson and

53 Shuffman Patent, Number 2, 961, 418.

Q. That is plaintiff's exhibit 2? A. Correct.

Q. When was that made? A. It was made on February 8, 1963.

Q. And the sample which you hold has been cured, has it? A. Yes, it has.

MR. DURHAM: I will offer that in evidence.

* * * * *

THE DEPUTY CLERK: Plaintiff's Exhibit Number 9.

(Plaintiff's Exhibit No. 9 was received in evidence.)

MR. DURHAM: I ask that this be marked.

THE DEPUTY CLERK: Plaintiff's Exhibit Number 10 is marked for identification.

(Plaintiff's Exhibit No. 10 was marked for identification.)

BY MR. DURHAM:

Q. I show you a glass beaker filled with a material which has been marked plaintiff's exhibit 10 for identification. Do you know what that is? A. Yes, I do.

54 Q. What is it? A. That is a polyester based polyurethane foam also. And, again, it is flexible and resilient. And that was prepared according to Example 8 of the Wilson and Shuffman Patent, Number 2, 961, 418.

Q. That is plaintiff's exhibit 2? A. Yes, sir.

Q. And has that been cured? A. That has been cured.

Q. Do you recall the approximate cure time and temperature? A. Approximately 18 hours at 100 degrees Centigrade.

MR. DURHAM: I ask that this be marked.

THE DEPUTY CLERK: Plaintiff's Exhibit Number 11 is marked for identification.

(Plaintiff's Exhibit No. 11 was marked for identification.)

BY MR. DURHAM:

Q. I show you an object which is red on its exterior and slightly sandy or tan-colored on the top and ask you what that is? That has been identified as plaintiff's exhibit 11 for identification. A. That is a composite composed of a film of polyvinyl chloride which has been precured on top of which has been poured a polyester based polyurethane foam. It was prepared according to Example 6 of the Wilson and Shuffman Patent.

55 Q. Plaintiff's Exhibit 2? A. Exhibit 2. And after the foam had been allowed to expand completely it was placed in an oven for cure. In this particular case it required about 14 to 16 hours at 70 degrees Centigrade.

Q. I ask you what relation, if any, plaintiff's exhibit 11 for identification bears to the second demonstration which you made this morning? A. They are analogous in every respect.

Q. And what is the difference between the two as of the moment? A. As of the moment this is in the cured state.

Q. By "this is in a cured state" do you mean plaintiff's exhibit 11? A. The entire composite.

Q. Whereas, the one still on the table at the side of the room is in an uncured state? A. Yes.

MR. DURHAM: I will ask that this be marked in evidence as plaintiff's exhibit 11.

THE COURT: It may be received.

(Plaintiff's Exhibit No. 11 was
received in evidence.)

BY MR. DURHAM:

Q. Mr. Ziemann, I notice that on one or two sides of plaintiff's
56 exhibit 11 the red film has separated from the resilient body with-
in the film. How do you account for that? A. That can be accounted for
primarily by us checking physically for adhesion.

THE COURT: You pulled it apart?

THE WITNESS: Yes, sir.

BY MR. DURHAM:

Q. What did you find when you pulled it apart? A. We found the foam tore first indicating the strength of the bond.

Q. How do you recognize that? A. If you look at it --

Q. Would you show His Honor? A. If you look at the polyvinyl chloride cured film (demonstrating) on the inside you will see spots of foam at the points where the film has separated from the foam. The same over here (indicating).

THE COURT: I see.

BY MR. DURHAM:

Q. Will you tell us, if you know, the reason for choosing the mold of the particular shape in which plaintiff's exhibit 11 was produced? A. I am sorry, I didn't get that question.

THE COURT: Why did you have it in that kind of a mold?

57 THE WITNESS: We wanted a mold which particularly demonstrated various different contours which would be something like you would run across, for example, in a commercial molding operation.

BY MR. DURHAM:

Q. And the various contours on the mold, do those present -- Were those chosen for any particular reason, do you know? A. No, none other than I mentioned.

MR. DURHAM: I ask that this be marked.

THE DEPUTY CLERK: Plaintiff's Exhibit Number 12 is marked for identification.

(Plaintiff's Exhibit No. 12 was marked for identification.)

BY MR. DURHAM:

Q. I show you another object, again, a red-body filled with a creamy colored material, and I ask you -- plaintiff's exhibit 12 for identification -- what that is, if you know? A. That also is a composite structure composed of a cured polyvinyl chloride film on top of which has been poured a substantially linear polyester which was permitted to foam in the mold. After it reached maximum expansion we allowed this to cure and this time it took approximately one hour to cure at 100 degrees Centigrade.

MR. DURHAM: I will offer that in evidence as plaintiff's exhibit
58 12.

THE COURT: It may be received.

THE DEPUTY CLERK: Plaintiff's Exhibit No. 12 received in evidence.

(Plaintiff's Exhibit No. 12 was received in evidence.)

MR. DURHAM: I have just discussed with the attorney for the defendant whether or not we should proceed to cure the two demonstration samples which were prepared this morning.

THE COURT: The ones at the table?

MR. DURHAM: Yes, sir, the ones which are on the table. That would require leaving them in the oven over night. The defendant's attorney tells me he has no objection --

THE COURT: I wonder if the authorities would have any here in the courthouse.

MR. DURHAM: He has no objection to dispensing with the curing.

THE COURT: I know he hasn't, but he is not in charge of this building. I was wondering whether or not that oven could be left here.

MR. DURHAM: We could cure them elsewhere, but he says he has no objection to our omitting the curing.

THE COURT: All right.

If he has no objection we will assume these would be cured at about
59 the same results as these two exhibits here which you have testified
to.

BY MR. DURHAM:

Q. Mr. Ziemann, the exhibits which are in evidence as plaintiff's exhibits 9 and 11, are those in the same condition as you would expect to find the two demonstration exhibits after curing which you prepared this morning? A. Yes.

MR. DURHAM Thank you.

You may cross examine.

CROSS EXAMINATION

BY MR. ARMORE:

Q. Mr. Ziemann, polyurethane materials basically are formed by reacting, at least insofar as this case is concerned, a polyester resin with polyisocyanate materials and polymerizing the reaction product; is that correct? A. No, it isn't.

Q. Well, what is inaccurate with that statement? A. In order to get any kind of foam you must have at least some water present.

Q. You will note, Mr. Ziemann, I didn't refer to foams. I said polyurethane materials as such. A. I am sorry.

Q. They involve as basic reactants polyester resins and organic polyisocyanates; is that correct? A. Yes.

60 Q. In order to get a foam material you would normally add water to get a reaction; is that true? A. Yes, sir.

Q. These polyester resins are also referred to frequently as alkyd resins; is that true? A. Under certain conditions, yes.

Q. Polyester resins are formed, as I understand from your testimony previously, by reacting poly base acids with polyhydric alcohols, polycarboxylic acids with polyhydric alcohols, which are reacted to form polyester resins; is that true? A. In a broad sense, yes.

Q. In a broad sense, yes. And alkyd resins generally are also formed by reacting polycarboxylic acids with polyhydric alcohols? A. Yes, with one distinction.

Q. What is that distinction? A. That an alkyd resin must have some unsaturation in either one of the components used to form the polyester.

Q. So there is some additional limitation in terms of a condition or a specific grouping, or a specific variation in one of the reactants necessary to form the alkyd resin, but basically and essentially the alkyd resin, just like the polyester resin, is formed as a result of the
61 reaction between a polycarboxylic acid and polyhydric alcohol? A. Yes, sir.

Q. Now, these demonstrations which you have performed all resulted in resilient polyurethane foam materials; is that correct? A. Yes.

Q. Would it also be obvious to one working in this field to use comparable materials with respect to the polyurethane and form -- using the same general type of reactants, that is polyester resins or polyhydric alcohols -- rigid polyurethane foams? A. What do you mean by comparable materials? Could you elucidate that for me, please?

Q. Can you use similar materials which may vary to some extent with respect to certain groupings or with respect to --

THE COURT: Materials such as what?

MR. ARMORE: Materials which will have as a matter -- Well -- Excuse me just a moment. I will withdraw my last question and I will ask you this question instead.

BY MR. ARMORE:

Q. Is it true that basically rigid polyurethane foams may be formed also by reacting polycarboxylic acid and polyhydric alcohol? A. No,
62 you said the foams in this case.

Q. Why not? A. You said foams.

Q. And water; in the presence of water? A. Yes.

Q. The answer is yes? A. Yes.

Q. Is it also true there are certain known variations with respect to conditions and with respect to degree and nature of polymerization and other known variations and conditions that may be applied which will give you either a rigid foam or a flexible foam? A. Yes.

Q. So that if you wanted, for example, if one working in this field instead of desiring to prepare a laminated, a molded laminated product, having a resilient polyurethane foam wanted to form the corresponding product with a rigid polyurethane foam, he would know what comparable materials to substitute with respect to the reactants, basic reactants, involved? A. Yes, that would depend on the kind of end composite one would desire.

Q. Is the use of a catalyst in forming these polyurethane foam materials well known in this art? A. Yes.

63 Q. Is it true that the function of the catalyst is merely to promote or accelerate the reaction? A. That is correct.

Q. And that commonly used catalysts are tertiary amine catalysts? A. I wish you would qualify that a little bit more.

MR. DURHAM: I object unless you specify the time in which you wish the witness to answer.

THE COURT: Do you mean the year or what when you say "time"?

MR. DURHAM: The approximate year, because the technology has changed so rapidly.

THE COURT: Constantly. Go ahead.

BY MR. ARMORE:

Q. Is it generally known that tertiary amine catalysts are used and can be used as promoters and accelerators of the reaction in forming polyurethane foam materials? A. Today, yes.

Q. Is it also true that it was known prior to 1954 that such tertiary amine catalysts could be used to promote or accelerate this type of reaction? A. I believe that is correct.

Q. Is it also true that these polyurethane foam materials are
known to come in various states, that is to say that these polyurethane
materials may be foam or not foam, they may be rigid or flexible, they
64 may be sheet or extruded or molded form or in adhesive form; is
that correct? A. I have never seen an extruded form but all of the
other forms are possible. They are possibilities.

Q. Would you agree also, therefore, that it was known before 1954 that polyurethane foams may be resilient as well as rigid? A. Yes.

MR. ARMORE: I believe that is all I will ask this witness, Your Honor.

THE COURT: Have you any redirect?

MR. DURHAM: Yes, Your Honor.

REDIRECT EXAMINATION

BY MR. DURHAM:

Q. Mr. Ziemann, you were just asked as to whether or not resilient foams were known prior to 1954. Are you speaking of your own knowledge or is that what you heard from others? A. That is what I have heard from others, sir.

Q. Do you have any personal knowledge? A. No.

MR. DURHAM: I move that his answer be stricken.

THE COURT: Let it stand for what it is worth.

BY MR. DURHAM:

Q. You were also asked as to whether alkyd resins and polyesters
65 were approximately equivalent terms. Are there any differences in the drying properties of alkyd resins as distinguished from at least some of the polyesters? A. Yes.

Q. What are those? A. Well, alkyd resins would dry much more quickly because they inherently possess unsaturation. A polyester of the type used to manufacture these foams here in Court today possesses no unsaturation whatsoever.

Q. Is the curing operation of a polyurethane foam a dry operation or not? A. No, it isn't.

Q. What type of an operation is it? A. It is a chemical cross-linking operation, not through double bonds.

Q. I believe you answered a few other questions with respect to what was known in 1954 with respect to this subject matter beyond the question of the resiliency of the foams. Is that of your own knowledge or also based upon what you have heard from others? A. Based upon what I have heard from others.

THE COURT: Might you have read something about it too?

THE WITNESS: Probably.

THE COURT: All right.

66 BY MR. DURHAM:

Q. When did you first become familiar with polyurethane foams? A. Beginning in August of 1958.

MR. DURHAM: No further questions on redirect.

MR. ARMORE: I would like to pursue that point, Your Honor, if I may.

THE COURT: You may.

RECROSS EXAMINATION

BY MR. ARMORE:

Q. With respect to the patent --

MR. ARMORE: First, I would like to offer for identification at this time defendant's exhibit -- I believe that would be number 2. And I would like to have it passed up to the witness.

THE DEPUTY CLERK: Defendant's Exhibit Number 2 for Identification.

(Defendant's Exhibit No. 2 was marked for identification.)

MR. ARMORE: I have another copy for Your Honor's convenience. Defendant's Exhibit 2 is a U. S. Patent to H. Van Swaay, Number 2,759,475. And also I would like to have this marked for identification as defendant's exhibit 3 this --

THE COURT: Why don't you take one at a time.

67 MR. ARMORE: All right, Your Honor, I will do that.

BY MR. ARMORE:

Q. With respect to the patent to Van Swaay, would you please examine that patent?

THE COURT: What is the date?

MR. ARMORE: The date of the patent is August 21, 1956, but it was filed on September 30, 1953, which is prior to the filing date of the present application.

BY MR. ARMORE:

Q. Are you familiar with that application, that patent, Mr. Ziemann? A. I believe I have seen it.

Q. Now, may I direct your attention to column 2 of the specification in that patent? Now the patent is directed to a laminated polyurethane foamed product having a layer of a plastic material, a sheet of plastic material laminated or drawing to the polyurethane foam. I call your attention particularly to column 2, line 18, the paragraph starting in line 18, column 2, which reads: "The entire surface of the layer 1 --" which is the skin of the sheet material, plastic sheet material -- "is covered with a layer of foam plastics 3 (e.g. polyurethane foam), which is thoroughly fixed on to it, in general by glueing. This foam plastics should at any rate be pliable and soft, and resistant to the plasticizing temperature --" which refers to the process of making this material.

68 Now, would that indicate to you a resilient polyurethane foam material? A. On the basis of the words "pliable and soft".

Q. On the basis of what I have just read? A. Yes.

MR. ARMORE: Now I would like to mark for identification as defendant's exhibit 3 a German Patent, Number 860,109, a copy of the German Patent and also a copy of the translation of the patent. Would you please mark that for identification?

THE DEPUTY CLERK: Defendant's Exhibit Number 3.

(Defendant's Exhibit No. 3 was marked for identification.)

MR. ARMORE: At this time I would like to offer defendant's exhibit 2 into evidence.

THE COURT: Have you any objection?

MR. DURHAM: No objection.

THE COURT: Very well, it may be received.

THE DEPUTY CLERK: Defendant's Exhibit Number 2 is received in evidence.

(Defendant's Exhibit No. 2 was received in evidence.)

MR. ARMORE: I pass the defendant's exhibit number 3 for identification to the witness.

BY MR. ARMORE:

69 Q. Now, I refer you to the translation of this German Patent and I ask you both with respect to the translation and the German Patent per se, are you familiar with this patent? A. Excuse me, sir. I don't have a copy of the translation before me.

Q. A copy of the translation is attached to the German Patent in the back. The German Patent translation constitutes the last 3 sheets of the exhibit. A. Okay.

Q. Now, I direct your attention to the heading there which indicates that this is a German Patent. At the bottom of the heading it is indicated that this German Patent was published December 18, 1952, which is prior to the filing date of the present application. Also, the first page of the German Patent per se indicates "Ausgegeben AM 18 Dezember 1952". That is the effective date of this patent. Now, are you familiar with this patent, Mr. Ziemann? A. I don't believe so.

Q. Well, I ask you to look at the translation, the first paragraph, which is headed "Synthetic Sponges". The first paragraph reads: "It is known that synthetic sponges are produced from elastic materials such as viscose or rubber, their high porosity being obtained by foaming especially with the aid of gas-developing materials, the so-called

70 blowing (inflating, sponging) agents."

And then the next paragraph sets forth the reaction products involved in preparing a resilient polyurethane foam material.

I ask you to read the next paragraph, which is a longer paragraph, and I ask you whether you agree with my statement?

MR. DURHAM: I object to the question, Your Honor.

THE COURT: Overruled.

The objection is overruled. Go ahead, read it.

THE WITNESS: Do you want me to read it out loud?

THE COURT: No, read it to yourself.

MR. ARMORE: It isn't necessary to read it out loud.

THE WITNESS: Would you repeat your question, please?

BY MR. ARMORE:

Q. Does this paragraph indicate the formation of a resilient polyurethane foam material? A. I don't believe the word "resilient" is used in that paragraph.

Q. Does it indicate the formation of a foam polyurethane material? A. Yes.

Q. Now, you note the heading at the top of the patent is synthetic

71 sponges, is that correct? A. That is correct.

Q. That would indicate resiliency, would it not? A. In the normal use of the word, yes.

Q. And I direct you now to the next page of the translation and to the last paragraph, the paragraph preceding Example 1, which reads:

> "The highly porous sponges synthetized in the manner described are distinguished by a firm coherence and very high elasticity with low bulk density."

That certainly would indicate a resilient material, is that correct? A. Yes, it would, but there is one, I would say, qualifying difference here which I don't think has been brought out. This material is not foamed in the conventional manner that we foam polyester base polyurethane materials. As it says in this paragraph which I read just a moment ago on page 1, the gas developing here is not coming from the water, it is coming from what they call a blowing agent. And --

Q. I am sorry. You go right ahead. A. Go ahead.

Q. You go right ahead and complete your statement.

THE COURT: Go ahead.

THE WITNESS: A blowing agent which must be decomposed at rather high temperatures.

72 BY MR. ARMORE:

Q. Suppose you look at the same page you were just looking at, which is the second page of the translation. The middle of the top paragraph starting with the word "Finally". Do you see that part of the specification? A. Yes.

Q. "Finally, the starting materials can be so selected that they themselves form gaseous separation products during the reaction." Is that what you have reference to? Would this constitute the type of reaction in which the gaseous product is formed by the reactants per se? A. No.

Q. Why not? A. Gaseous products are formed by the reactants per se if there is water, but there is no water present here.

Q. Is water, is it always necessary that water be present to form the foam product? A. Of the type we are discussing here, yes.

Q. Mr. Ziemann, isn't it possible that you can use as your polyester a polyhydric alcohol that has a sufficiently large number of hydroxyl groups so you can get the formation of water and foaming as a result of that? A. Hydroxyl groups don't give any gas at all.

Q. Mr. Ziemann, do you recall this patent is characterized as a sponge, a synthetic sponge? A. That is correct.

73 Q. And you agree that it was resilient? Obviously, a sponge material has to be a porous cellular material, isn't that true? A. Yes.

Q. Now, I ask you to look at the same page in the middle of the page, and I ask you to read the first sentence starting with the "The reaction of the reactive components." And then the next sentence: "Furthermore, they can be influenced by catalysts such as iron (ferric) chloride, tin tetrachloride, triethylamine ..." I will stop at that point. Is this a tertiary amine catalyst that is useful in this reaction? A. Yes.

MR. ARMORE: That is all.

THE COURT: Have you anything further of the witness?

MR. ARMORE: I don't know if I offered the German Patent in evidence. I would like to offer that in evidence as defendant's exhibit 3.

* * * * *

THE COURT: It may be received.

THE DEPUTY CLERK: Defendant's Exhibit No. 3 is received in

74 evidence.

(Defendant's Exhibit No. 3 was received in evidence.)

MR. DURHAM: No further redirect, Your Honor.

THE COURT: Well, have both sides finished?

MR. ARMORE: I have completed with that witness, Your Honor. I haven't cross examined the other witness.

MR. DURHAM: I still have more from Mr. Newell.

THE COURT: Well, it is time for our noon recess. We will suspend until 1:45 this afternoon.

(Whereupon, at 12:30 p.m. the Court recessed for the luncheon period.)

75 Afternoon Session
1:45 p.m.

THE COURT: You may call your witness, Mr. Durham.

MR. DURHAM: Mr. Newell is recalled.

THE COURT: The witness has already been sworn. He is being recalled.

MR. DURHAM: Will you mark this, please?

THE DEPUTY CLERK: Plaintiff's Exhibit No. 13 is marked for identification.

(Plaintiff's Exhibit No. 13 was marked for identification.)

Thereupon --

ISAAC L. NEWELL

was recalled as a witness and, having been previously duly sworn, was examined and testified further as follows:

DIRECT EXAMINATION

BY MR. DURHAM:

Q. Mr. Newell, I show you a piece of material about a foot long and 2 or 3 inches wide and ask if you know what that is? It has been marked plaintiff's exhibit 13 for identification. A. Yes, this is an example of polyurethane foam made into a specimen for vibration tests.

Q. And can you tell us something about what type of foam that is? A. This is a rigid polyurethane foam and this was made in the early 1950's, probably around 1952.

Q. And do you know where and by whom? A. Well, this was made
76 under my direction.

MR. DURHAM: I will offer that in evidence as plaintiff's exhibit 13.

MR. ARMORE: No objection.

THE COURT: Give it to the Clerk, please.

THE DEPUTY CLERK: Plaintiff's Exhibit 13 is received in evidence.

(Plaintiff's Exhibit No. 13 was received in evidence.)

* * * * *

THE DEPUTY CLERK: Plaintiff's Exhibit Number 14 is marked for identification.

(Plaintiff's Exhibit No. 14 was marked for identification.)

BY MR. DURHAM:

77 Q. I show you another specimen, Mr. Newell, which has been marked plaintiff's exhibit 14 for identification, and ask if you can tell me what that is? A. This is another rigid polyurethane foam made about the same time, and there is a piece cut out of a slab of the foam and it indicates a white one rather than a colored one as in exhibit 13.

THE COURT: Did you make it yourself?

THE WITNESS: Yes, that also was made under my direction.

BY MR. DURHAM:

Q. Is plaintiff's exhibit 14 a polyester or polyether type? A. This is a polyester.

Q. And plaintiff's exhibit 13? A. Is also a polyester.

MR. DURHAM: I will offer Plaintiff's Exhibit 14 in evidence.

MR. ARMORE: No objection.

THE COURT: It may be received.

THE DEPUTY CLERK: Plaintiff's Exhibit No. 14 is received in evidence.

(Plaintiff's Exhibit No. 14 was received in evidence.)

BY MR. DURHAM:

78 Q. During your earlier testimony the terms "resilient and rigid" have been used as applied to polyurethane foams, especially the polyester polyurethane foams. Would you comment on the different types of foams which there are in the polyester polyurethane foams? A. There are rigid polyurethane foams and there are flexible or resilient polyurethane foams; and there are foams which are neither resilient nor rigid.

THE COURT: But might be flexible?

THE WITNESS: They would not be flexible.

THE COURT: There is a difference between flexibility and resilience to my way of thinking.

THE WITNESS: Yes. I am thinking of foams which have a cheesey like substance.

THE COURT: They are soft?

THE WITNESS: They are soft but not resilient. By soft they can be reformed but they don't return to their original shape. When they are resilient when you press them or deform them when the pressure is removed they return to their original shape.

BY MR. DURHAM:

Q. With respect to resilient polyurethane foams, would you describe the properties which you find in a typical resilient polyurethane foam? A. Yes, the resilient polyurethane foam will have elasticity. It
79 can be deformed without fracture. It returns to its original shape after it has been deformed. It is shock-absorbent.

Q. And would you characterize the rigid polyurethane foams with respect to their properties? A. Yes, rigid polyurethane foams are hard, strong, very high tensile strength, and they are self supporting and they are also shock-resistant.

Q. Now, referring to the patent to Simon, et al., which is plaintiff's -- defendant's exhibit 1 and item A in that exhibit -- Do you have a copy of that before you? A. I have exhibit 1, yes.

Q. Now, referring to column 1 of that patent and the first 3 lines in which he says "enclosures, housings, and the like, for electrical apparatus, and like equipment" --

THE COURT: Would that be insulation or a conduit for electrical wires?

THE WITNESS: This is really housing for electrical equipment.

THE COURT: Well, what is housing? Would that be a conduit for a wire?

THE WITNESS: No, this would be for rather complicated equipment; as a matter of fact, large pieces of equipment, such as used in radar and the like, and would include condensors and coils and various --

80 THE COURT: This would be a housing?

THE WITNESS: This would be a housing.

BY MR. DURHAM:

Q. Or a canopy? A. Housing, box, canopy or enclosure.

Q. In column 1, line 13, the patent uses the term "radomes", r-a-d-o-m-e-s. Would you tell us what a radome is? A. A radome is a housing for radar equipment.

Q. And where would those be found as of 1949, the filing date of the Simon patent? A. They could be found on aircraft.

Q. What properties are required in the material of which a radome was made in 1949, if you know? A. Radomes must be rigid in order that they may not deform and change their shape. They have to have a tough or hard, rigid outer skin in order to be on the aircraft when it takes off and prevent damage from stones or materials on the runway, to prevent damage from rain, heat, sleet and hail in flying through the air; and these must maintain their shape and it requires rigidity to do it.

Q. What benefit or detriment would you get if the material in a radome were resilient? A. If it were resilient why the parts would not necessarily maintain their relationship with one another, as the radar
81 equipment.

Q. I believe I asked you, but I am not sure, as to when you first became aware of flexible or resilient polyurethane foams? A. I think I became aware of them somewhere around 1955 or 1956.

Q. And were you aware of them in a practical sense or from the literature? A. That may have been both. It was probably from literature first.

Q. At that time were you following the literature in this field rather closely? A. Yes, I was.

Q. Have you produced any specimens in accordance with the process of the patent to Simon, et al., defendant's exhibit 1-A? A. Yes, I prepared Example 9 given at the bottom of column 13 of the Simon Patent, Exhibit 1.

Q. That is there referred to as Roman IX? A. Example Roman IX.

Q. And do you have a specimen of that foam here? A. Yes.

MR. DURHAM: I ask that this be marked.

THE DEPUTY CLERK: Plaintiff's Exhibit Number 15 is marked for identification.

82 (Plaintiff's Exhibit No. 15 was marked for identification.)

BY MR. DURHAM:

Q. I show you a paper cup which has been marked plaintiff's exhibit 15 for identification and ask if you can tell me what that is? A. Yes, this is a rigid polyurethane foam made in accordance with Example Roman Numeral IX of the Simon Patent, Exhibit 1.

THE COURT: Is there a coloring material in that?

THE WITNESS: The formula calls for aluminum leafing powder and that is what causes the color.

BY MR. DURHAM:

Q. As of 1949 or '50, do you know whether it was common to use aluminum leafing powders in polyurethane foams? A. Yes, it was.

Q. I notice in Example IX in column 13 of the Simon Patent it says "Alkyd resin of Formula A". Did you use such an alkyd resin in preparing the foam of plaintiff's exhibit 15 for identification? A. I used Formula A of the Simon Patent, Exhibit 1, in the manufacture of the resin used in making this foam.

Q. Where did you obtain that resin? A. It was made under my direction.

83 Q. Do you have the remainder of the batch which you made here in Court for inspection? A. I do, yes.

MR. DURHAM: That is available for inspection if you choose.

BY MR. DURHAM:

Q. When was the specimen, plaintiff's exhibit 15 for identification, made? A. It was made February 9, 1963.

Q. That is the date of the resin or the date of the foam. A. The foam.

Q. And the resin had been prepared when? A. About two weeks earlier.

MR. DURHAM: I will offer that in evidence as Plaintiff's Exhibit 15.

THE COURT: It may be received.

THE DEPUTY CLERK: Plaintiff's Exhibit No. 15 is received in evidence.

(Plaintiff's Exhibit No. 15 was received in evidence.)

MR. DURHAM: Would you mark this, please.

THE DEPUTY CLERK: Plaintiff's Exhibit No. 16 is marked for identification.

(Plaintiff's Exhibit No. 16 was marked for identification.)

84 BY MR. DURHAM:

Q. I show you another specimen which has been marked plaintiff's exhibit 16 for identification, and I ask if you can tell us what that is?

A. Yes, this is a rigid polyurethane foam made in accordance with the same formula, that is Example IX of the Simon Patent, and produced from the same resin as indicated by the formula in the Simon Patent.

THE COURT: How does that differ from the previous?

THE WITNESS: It does not differ. This was used for a different purpose.

MR. DURHAM: My purpose in presenting this is that it is a relative small piece and if anyone wishes they can test the breaking strength of it and remove it, whereas it would be rather difficult to do so from rather full cup.

THE COURT: I noticed that.

MR. DURHAM: I will offer that as plaintiff's exhibit 16.

THE COURT: It may be received.

THE DEPUTY CLERK: Plaintiff's Exhibit No. 16 is received in evidence.

(Plaintiff's Exhibit No. 16 was received in evidence.)

MR. DURHAM: Would you mark this, please?

THE DEPUTY CLERK: Plaintiff's Exhibit No. 17 is marked for

85 identification.

(Plaintiff's Exhibit No. 17 was marked for identification.)

BY MR. DURHAM:

Q. I show you a piece which has been marked plaintiff's exhibit 17 for identification and ask if you could tell us what that is? A. Yes, this is the foam, the polyurethane foam from exhibit 16 which was poured into a mold consisting of a fibre-glass reinforced resin.

Q. And then what happened to that subsequently? A. This was subsequently put in an oven and cured and here it is.

Q. And when was this made? A. This was made the same date as the foams in the cups, February 9, 1963.

Q. And prepared by you? A. Prepared by me.

MR. DURHAM: I will offer that in evidence.

THE COURT: February 9th?

THE WITNESS: Yes.

THE COURT: It may be received.

THE DEPUTY CLERK: Plaintiff's Exhibit No. 17 is received in evidence.

(Plaintiff's Exhibit No. 17 was received in evidence.)

86 BY MR. DURHAM:

Q. Would you characterize the foam in plaintiff's exhibits 15, 16 and 17 with respect to their physical properties? A. Yes, they are rigid foams. They have high strength. They have no resilience. They cannot be deformed without breaking.

Q. With respect to plaintiff's exhibit 17, what would happen if you put a relatively heavy force on the opposite sides of that? A. Well, the foam would crumble and disintegrate and powder.

Q. Now, will you turn to figure 3 of the Simon Patent, Defendant's Exhibit 1-A, and specifically to column 5, beginning at the top of the column and going down to line 24 for the moment?

THE COURT: Which page is that?

MR. DURHAM: That is on page 3, column 5.

THE COURT: All right.

BY MR. DURHAM:

Q. I would like you to comment on certain of the operations and characteristics which Simon specifies in there. One is the "preformed and prelaminated" line 11; "the skin materials 14 may either be preformed and prelaminated". What do you understand by that expression? A. By
87 being preformed and prelaminated means that the skin fabric, in order to be prelaminated, has more than one layer of a skin fabric. And preformed and impregnated with a laminating resin means that the resin has been forced into the fabric and then the fabric has been forced against the mold surface.

Q. And in lines 13 and 14 he says that they are then formed or shaped to fit their respective mold surfaces. Would you comment on that operation? A. Well, that means that the resin and the fibre-glass cloth has been mechanically pushed forth to meet the surface of the mold. However, the mold surface for this type of operation would necessarily have to be somewhat smooth.

Q. And supposing it were a complex surface or a textured surface, what difficulties might you encounter, if any? A. It would be very difficult to hold or to have the laminated, prelaminated skin materials keep in contact with the surface of any intricate mold.

THE COURT: Well, there is no skin on this, is there, this exhibit? It is just material.

THE WITNESS: That consists of two parts. There is the foam part, which is the aluminum appearing material, and then there is the outer skin.

THE COURT: This is the skin, this brown part?

88 THE WITNESS: That brown part is the outer skin.

THE COURT: There is no skin on this though?

THE WITNESS: There is no skin on that.

THE COURT: I see.

BY MR. DURHAM:

Q. I believe that the Simon Patent, defendant's exhibit 1-A, discloses more than one procedure with respect to the reinforcing material; is that correct? A. Yes.

Q. Would you tell us what the other procedures are; just summarize them, referring to the figures if you choose? A. The reinforcing material may be impregnated with a resin and cured to produce a hard reinforced glass laminate which has high strength and high erosion resistance.

THE COURT: That would mean the skin has glass?

THE WITNESS: The skin has glass and this skin in exhibit 17 has glass cloth within it.

In the second way of doing it glass cloth may be impregnated with the liquid resin and put into the mold but not cured at that time. And then when the foam is put into the mold, or the reaction product which is formed -- there is some heat given off during the foaming which will help to cure the original glass impregnated resin -- and so then the two portions, both the foam and the outer hard glass skin can be cured at the same time.

89 In the third step, or in the third process of Simon, no laminating resin, or no hard resin, is either put in the glass or precured with the glass, but rather the glass is simply draped in the form of cloth or in the form of a felt within the mold on the mold surface and the reaction mixture of the polyester, polyisocyanate is added to the mold so that the mixture, as it rises through the mold, impregnates through this glass fabric.

THE COURT: That is the little particles go through?

THE WITNESS: However, it is doubtful in my mind whether or not this is a practical way, because the foaming continues as this material goes through and you would get foaming between the glass cloth and the mold surface, thus pushing the glass cloth into the foam rather than having it right at the surface. So I would suspect that it is very difficult to drape the inside of a mold, especially if it has any contours or any geometric shape to it. It would be very difficult to hold such a thing in place while this foaming is going on.

THE COURT: Well, the glass product is still glass when the product is finished?

THE WITNESS: Yes, but it may not be on the outside surface.

THE COURT: For the reason the substance foaming which it goes
90 through may form a film?

THE WITNESS: It may form a film and in some cases it may not, depending on how uniform the glass fabric or the glass fibres are.

BY MR. DURHAM:

Q. Would the presence of the glass fibres have any effect on allowing or preventing the surface or skin of the Simon structure from following the pattern of the mold? A. Yes, the fabric is a material which can be forced, let me say, against smooth molds but would be very difficult to force into a mold that had sharp re-entrance angles such as this exhibit (indicating).

THE COURT: Exhibit 12?

THE WITNESS: Exhibit 12.

BY MR. DURHAM:

Q. Can you comment on the pressures that are built up within the mold in the Simon method during the foaming operation? A. The foaming in accordance with Simon is down at atmospheric pressure and there are not very high pressures developed there. The foams used may amount to 10 pounds per cubic foot and, therefore, the pressures on the surface of the mold would be only in ounces per square inch, something that you could push with your finger very easily.

Q. You have mentioned the density of 10 pounds per cubic foot.
91 Just as a reference point, would you give the weight of water for a
cubic foot? A. Five pounds per cubic foot for water.

Q. Again returning to the resilient and the rigid foams, would you comment on the chemical differences which you find between a resilient and rigid foam? A. Yes, a resilient foam is one which is made from a polyester which is essentially linear, whereas a rigid foam is made from a polyester which is essentially branched.

Q. Would you tell us whether or not you find the terms resilient and rigid foams applied to the polyester foams in places other than in the patents? A. Would you repeat that, please?

MR. DURHAM: Would the reporter read the question?

(The pending question was read.)

THE COURT: What do you mean by places?

MR. DURHAM: In other writings.

BY MR. DURHAM:

Q. Would you comment on that, where else you would find those terms used? A. Resilient and rigid. The term resilient can be used in connection with rubber.

Q. No, I say with respect to the polyurethane foams. Do you find it only in the patents or do you find it in other writings concerning polyurethane foams? A. Yes, you will find it in other writings other

92 than the patents.

THE COURT: That answered the question.

BY MR. DURHAM:

Q. I call your attention to figure 8 of the Simon Patent, defendant's exhibit 1-A, and at the top of that figure at the lefthand there is the reference numeral 23. What does that designate? A. That is excess foam which has come out of the top of the mold.

THE COURT: I thought that was a cross-section of the mold?

MR. DURHAM: Would you answer His Honor's question as to whether figure 8 is a cross-section?

THE WITNESS: Yes, figure 8 is a cross-section, but the question was what is 23, which is at the top of the lefthand corner of the mold.

BY MR. DURHAM:

Q. Did you compare that portion, 23, with the ice cream cone effect on top of plaintiff's exhibit 17, just to refer to it crudely? A. The foam at the top of exhibit -- I forget the number.

THE COURT: That 23 you gave him, the top surface of the part, 20, according to the specification --

93 THE WITNESS: I am sorry. I understood just from looking at figure 8 that 23 was the foam which had come up into that part of the lug. I note also that 23 is part of figure 7, where there is no foam at the top,

and 23 there definitely does show that it is a lug and the foam has come up into that portion there.

BY MR. DURHAM:

Q. In that connection, Mr. Newell, I refer you to column 8, line 45, of the specification of the defendant's exhibit 1-A. A. Yes, the line reads: "The correct position on the part 20 by lugs 23 . . ."

Q. Now, I was asking you with respect to that excess foam, to compare that with the top of the specimen which you submitted as plaintiff's exhibit 17. A. Yes.

Q. The aluminum foam in the fibre-glass skin. A. It is always normal to have an excess of material when you fill the mold so that the mold will be entirely filled, and it is usual to have some excess that can be trimmed off the top afterwards.

Q. Would you tell us whether or not there is any difference in the density of rigid polyurethane foams and resilient polyurethane foams? A. Both resilient and rigid polyurethane foams can be made in a variety
94 of densities, and just because one is resilient and the other is rigid is no reason for them being of different densities. As a matter of fact, these foams that we have here are very close to the same density.

Q. Do you have before you a copy of Claim 28, which is the claim here in suit? A. I do.

Q. Now, would you comment, without commenting upon any of the legal aspects, some of the terms which are used in that claim and process which is described by the claim from a technical point of view as distinct from anything involving whether or not it is a patentable invention, which is something that is entirely for the Court's decision?

THE COURT: Do you want him to interpret the claim?

MR. DURHAM: I do not want him to interpret it; I want him to define the terms and state what the process is as an overall technical process.

THE COURT: All right.

MR. ARMORE: May I object? I believe the question is indefinite. Counsel has not indicated which terms he wants defined.

THE COURT: I think he said the technical terms.

BY MR. DURHAM:

Q. Going through it, first, what is a molded laminated product?

95 A. A molded laminated product is a product which is made in a mold and consists of two or more structures to make a laminate.

Q. The next term, I think, is "lining the inner surface of a mold". A. Lining the inner surface of a mold means to put a film on the surface which can be done by spraying or painting or slushing.

Q. The next term is "film".

THE COURT: He mentioned the manner it was put on. It has to be a film.

THE WITNESS: That is right; a thin flexible material.

BY MR. DURHAM:

Q. Then we come to "polyvinyl chloride resin". A. A polyvinyl chloride resin is a resin which consists -- it is a synthetic resin -- of organic material which contains carbon hydrogen and chlorine.

Q. Is that the same as vinyl chloride? A. Polyvinyl chloride. Not vinyl chloride. Vinyl chloride is not a resin. Vinyl chloride is a liquid.

Q. And "a curable polyester resin" is the next term. A. A curable polyester resin is one which has unsaturated linkages in it so that it will cure; and by curing we mean to harden, to set up -- it doesn't flow.

96 Q. And "a reaction mixture". A. A reaction mixture is a mixture of materials which will react chemically one with another.

Q. The 4 items that are next which are numbered, I believe, except for water, are defined in the appendix to the brief which was received as plaintiff's exhibit 7. Instead of your defining those, I will ask you to comment on the polyester resin, just that one term? A. The polyester resin is the reaction product resulting from the reaction of a polyhydric alcohol and a polycarboxylic acid. But the polyhydric alcohol and the polycarboxylic acid must be chosen so that it will form a rigid or resilient foam, depending upon the choice of the materials, in making the polyester resin.

Q. Can you use the same polyester resin for a resilient foam and also for a rigid foam? A. No, you cannot.

Q. "Allowing said mixture to react", would you comment on that? A. Allowing the mixture to react is the time the material is allowed to react for a definite time before it is either poured into the mold or something is done with the reaction.

Q. Is that what we saw demonstrated this morning as a matter of two or three minutes with the particular materials involved? A. That is
97 true.

Q. The next term is "a resilient foamed body within said moid". A. A resilient foamed body is, again, one which is flexible and can be deformed and it returns to its original shape; and it is shock-absorbent and elastic.

Q. The next term is "cure". A. Cure is to have the reaction proceed to completion and this, again, is a function of temperature and time. A long time at low temperature will be equivalent to shorter times at higher temperatures.

Q. And "to bond to said film", the word "bond". A. To bond is a function of adhesion and possibly chemical reaction which gives a strong adhesion of the foam to the film.

Q. Now, Mr. Newell, do you have a copy of the decision of the Board of Appeals dated June 22, 1961, which is defendant's exhibit 1-E, and which is also included within the certified copy of the file history of exhibit 1? A. No, I don't believe so.

Q. I call your attention to page 3 of that decision, which is page 193 of the certified copy of the file history. I am sorry. Page 194, which is page 4 of the decision. Have you read this decision? A. Yes, I have.

98 Q. In the first full paragraph on page 4 at the end of that paragraph the Board of Appeals says:

"Since this claim is a method claim, he (the examiner) considers it to be immaterial that a glass fabric is present in the skin."

I wonder if you would comment on that?

* * * * *

THE WITNESS: The putting of a glass fabric so that it is present in the mold and on the skin requires a different method than putting a film

on such as by brushing, spraying and the like. The glass fabric has to be mechanically forced to the surface of the mold, and it has to be fastened or draped within the surface of the mold, which to my opinion,
99 is entirely different than producing a film on the surface of the mold.

BY MR. DURHAM:

Q. Now, in the second or last sentence of the next paragraph, which says, "These resins are disclosed in the reference for impregnating the glass fabric or other material of the lining," immediately above that it refers to polyvinyl chloride resin. Would you tell me whether or not you find any disclosure in the Simon Patent, defendant's exhibit 1-A, or a polyvinyl chloride resin? A. No, I found no disclosure of polyvinyl chloride resin in that Simon Patent.

Q. And I call your particular attention to column 16 of the Simon Patent and ask whether or not in connection with that answer you had considered the subject matter found in column 16? A. Yes, I had.

Q. In the next paragraph of the Board's decision -- I will withdraw that. Now, if you will read the paragraph beginning at the bottom of page 4 to yourself then I will ask you with respect to the sentence beginning at the top of the next page, page 5. In that sentence there is mentioned "vinyl chloride (column 16 of the patent)". I again ask you is that different from the polyvinyl chloride recited in Claim 28? A. Yes, it is entirely
100 different.

Q. As a matter of fact, going down in the middle of the paragraph:

> "As to the limitation that the foam is resilient, this is a limitation on the product of the step of allowing the mixture to react."

Do you understand that "allowing the mixture to react" in one manner or another influences the resiliency of the foam product? A. No, it does not. It requires the choice of the polyester resin in the mixture to determine whether or not it is going to be resilient or rigid.

Q. Skipping one line or one sentence, "Moreover, 'resilient' is a relative term. . ." And stop there. Would you tell us whether "resilient" is in your opinion relative with respect to rigid, or can you characterize the two terms in some other manner? A. I don't. As far as I am concerned, resilient and rigid are the opposite of one another; and when one is resilient it can't be rigid and vice versa.

Q. That is generally true or would you limit that to the polyurethane field? A. I think this is generally true.

MR. DURHAM: You may inquire.

THE COURT: Cross-examine, Mr. Armore.

101 CROSS EXAMINATION

BY MR. ARMORE:

Q. Mr. Newell, with respect to plaintiff's exhibits 15, 16 and 17, which presumably represent embodiments of an example in Simon, et al., you incorporated an aluminum powder in the polyurethane mixture; is that correct? A. We used an aluminum leafing powder, as called for.

Q. You incorporated aluminum leafing powder in the polyurethane mixture; is that true? A. That is true.

Q. However, you will note that many of the other examples of polyurethane reaction mixtures do not contain aluminum leafing powder; is that correct? A. That is correct.

Q. So you could have prepared these foam polyurethanes without an aluminum leafing powder necessarily? A. That can be done.

THE COURT: Has that aluminum leafing powder any chemical effect upon the mixture?

THE WITNESS: It appears to. It appears to initiate the formation of the foam, the nucleate.

THE COURT: Suppose you made it without the aluminum, would it have the same result except for the color? Would the product be the same?

THE WITNESS: It might not have quite as much foam.

102 THE COURT: It is a stimulant for the foam then?

THE WITNESS: It is a stimulant for the foam.

BY MR. ARMORE:

Q. There are various additives and variations possible in forming these polyurethane experiments; isn't that true? A. Many.

Q. And many additives and many variations are well known and are known to have specific effects; is that true? A. Yes.

Q. You have indicated that the resilient foams, polyurethane foams, as opposed to the rigid polyurethane foams, differ in the specific, precise chemicals that are used in the mixture; and that in the resilient foams a polyester is linear and in the rigid foams the polyester is branched; is that true? A. That is true.

Q. You stated that -- on your direct examination -- these are well known characteristics of these materials and the results of using these different materials; isn't that true? A. Do you mean --

Q. I mean it is a well known fact that relatively linear -- the use of linear polyesters would generally have resulted in a resilient foam, and the use of branched polyesters would generally result in a rigid foam?

103 A. That is correct.

Q. Do you have a copy of the patent to Simon, et al., with which we are concerned in this civil action in front of you? A. Yes.

Q. Now, Simon, et al., has particularly indicated his product may be used as a housing. Now, would you agree that a housing is something of an enclosure or something like a dome or a box? It is a receptacle of some type that is used to protect something held within that receptacle; is that true? A. Yes, it is an enclosure, a housing, a box.

Q. Would you agree that Simon, et al., discloses a process for preparing a molded laminated product; that Simon, et al., disclosed such a process? A. Simon's product is a laminated product.

Q. It is a molded laminated product? A. Yes.

Q. Now, you have indicated in your answers on direct examination that the polyurethane foam core of that product is necessarily rigid in the disclosure of Simon, et al.? A. Yes.

Q. And the coating, the liner, is necessarily rigid, unflexible and rigid as well, is that true? A. In two of his examples they should be rigid.

104 Q. Now, would you agree that in the process that is disclosed in Simon, et al., for forming his molded laminated product he lines the mold, he lines the mold with a liner of some type, a lining material? A. He says it is glass, or a glass fabric or glass film.

Q. I have asked you a specific question. You agree that he lines the mold with a material of a certain type? A. Yes.

Q. Now, subsequently he adds to the mold or he partially -- I will withdraw that. You will also agree, that subsequently he partially fills the mold with a reaction mixture of materials that would result in a polyurethane, in a foamed polyurethane core or foamed polyurethane product?

THE COURT: I thought that in this patent here he impregnated that lining before anything else was done?

MR. ARMORE: Well, Your Honor -- He can impregnate the lining.

THE COURT: Then go ahead from there. Your question is generally understood by someone who knows as little about the subject matter as I do that it hadn't been impregnated before they put this core matter in there.

MR. ARMORE: I was setting down the basic steps in the process and then was going to go back and investigate each one with the witness. I was coming back to the specific lining he was using and how it was being
105 formed by cross-examining the witness along those lines.

THE COURT: Go ahead.

BY MR. ARMORE:

Q. And after he has lined the mold he partially fills the mold with a reaction mixture which will result in a foamed polyurethane material?

THE COURT: There you go again. Why don't you say the impregnated lining, after he has the impregnated lining? That is what it is, isn't it?

MR. ARMORE: Yes, Your Honor.

THE COURT: Well, use that. I want it clear. I am not a chemist, you know.

BY MR. ARMORE:

Q. After he has lined the molding with the resin -- impregnated lining -- then he partially fills the mold with a reaction mixture that will result in a polyurethane foam core; is that true? A. He partially fills the mold with a reaction mixture which will form a rigid --

Q. Will form a rigid form polyurethane core or product. And subsequently he allows the reaction to proceed to form that core? A. Yes.

Q. And subsequently after that he cures the product by permitting
106 it to continue to react, preferably, at an advanced temperature for
the polymerization or curing to proceed to completion. Do you agree with
that? A. Yes.

Q. Now, I would ask you to look at the Simon, et al., Patent, and I refer you specifically to column 8 and the portion of the specification that starts at about line 55 of column 8. Do you agree that this portion of the specification relates to a particular manner in which Simon, et al., form the skin or the liner in the process which is disclosed in this patent?

THE COURT: I would think it means what it says.

MR. ARMORE: Yes, that is about what it says.

THE WITNESS: I didn't determine from your question whether you asked whether or not this disclosed the process.

MR. ARMORE: This discloses one of the procedures.

THE COURT: You asked him if he agreed with that, didn't you?

MR. ARMORE: Yes, does he agree with it.

THE WITNESS: I don't believe that I can agree that this gives the method in which the glass fabric or glass matting or felt are actually held in contact with the mold. This states the materials that are used.

BY MR. ARMORE:

Q. Well, I didn't ask you that. I asked you whether this discloses
107 one of the procedures that Simon, et al., disclosed for forming
a lining for the mold or a skin or outer layer for that product? A. Well,
the sentence beginning with line 55 is not a procedure, as I interpret it.
It says what the materials are but doesn't give a procedure.

Q. I refer you to the second sentence of that paragraph. "The skin material may be of the same nature..."

THE COURT: You needn't repeat that.

"However, in this manner or process of carrying out the invention the skin materials are saturated or partially saturated . . ." That is what you want to get at.

MR. ARMORE: Yes.

THE COURT: Go ahead.

BY MR. ARMORE:

Q. "However, in this manner or process of carrying out the invention the skin materials are saturated or partially saturated with what we term a laminating resin prior to or at the time they are arranged on the surfaces of the mold. . ." A. That does give part of a process.

Q. That gives part of the procedure. That first sentence, the one preceding that, indicates the liner may consist of either one layer of material or several layers. That first sentence, would you agree, indicates --

108 THE COURT: "It may be one or more layers or plies of fibre glass fabric, fibre glass matting, felt, or the like." That is what they are.

MR. ARMORE: That is correct.

THE COURT: All right, that is what it says.

MR. ARMORE: On direct examination the witness questioned the fact only layers of material were used in the skin and I was drawing his attention to this portion of the specification, which indicates only one layer may be used, that several layers are not necessarily required.

THE COURT: I suppose a thicker layer would be better than a thin layer. Go ahead.

BY MR. ARMORE:

Q. Do you agree that in the procedure, this particular procedure, of forming the skin that as a result of the foaming reaction the resinous material in the skin will be firmly bonded to the foamed polyurethane material? A. Yes.

THE COURT: It would be bonded to the foam?

MR. ARMORE: Firmly bonded.

THE COURT: What?

MR. ARMORE: Resinous --

THE COURT: Resinous material is viscous and goes through the interstices of the fabric whether the fiber be of glass or anything else.

109 MR. ARMORE: That is correct.

THE COURT: Do you want to know whether it goes through those interstices?

MR. ARMORE: No, that is not my question.

THE COURT: I don't know what it is.

MR. ARMORE: I asked the witness and I believe he answered as to whether a firm bond develops through between the skin and the polyurethane material; and I believe he answered yes.

THE WITNESS: Yes.

THE COURT: Oh, yes, it does. And the reason it does so is because it penetrates the interstices, is it; it is not because it sticks to the glass fibers?

THE WITNESS: That is method 3 of Simon. Simon has three different methods. One is he puts the outer skin, the resin of the outer skin and precures this and then it is impervious to the foam penetrating but this comes up against it and it adheres firmly. That was my answer, yes, to his question. The second one is that he has the glass fabric but he has the liquid resin, the uncured liquid resin.

THE COURT: That is what I meant when I said viscous.

THE WITNESS: And he foams against that and he uses the curing temperature to bond them both and to cure and harden both resins.

110 THE COURT: I think that is clear. Go ahead.

BY MR. ARMORE:

Q. With respect to this resinous material that is used in the skin or in the lining, I believe that you have stated that resinous material can be in an uncured state and it is in an uncured state, is that true? A. In one of Simon's methods --

Q. One of the procedures. That is the procedure you just looked at?

THE COURT: Why don't you let him finish the answer? Were you finished with your answer? You said in one of Simon's methods and he broke in with another question. Now finish your answer.

THE WITNESS: In one procedure the resin is left uncured when the foam mixture is added to the mold.

BY MR. ARMORE:

Q. And that is the procedure that we have just been discussing at the bottom of column 8, is that true? A. Yes, that is true.

Q. Now, with respect to these resins, is it true that Simon, et al., can use an uncured polyester resin; it discloses that he can use a polyester resin, uncured? A. What?

Q. I am sorry; I will restate my question. With respect to these resins, is it true that Simon, et al., discloses that he can use an uncured
111 polyester resin? A. I am not sure what you mean by "these resins".

Q. These resins in the lining of the skin which we have just discussed. A. May I have the question again?

Q. With respect to these resins in the lining or in the skin which we have just considered, is it true that Simon, et al., disclosed that they can use an uncured polyester resin? A. Yes.

Q. Is it also true that they disclose that they can alternatively use a copolymer of a polyester resin and a polyvinyl chloride as such resin? A. No.

Q. I refer you now to the bottom of column 15 and also parts of column 16 in the Simon Patent. The bottom of column 15 to the paragraph which starts:

> "If desired, the laminating resin may comprise a blend or mixture of a selected unsaturated polyester, such as above named, and a monomeric compound which serves as a copolymerizing additive. For example. . ."

There follows a list of examples. Opposite line 30 we have Vinylidene chloride. In view of what you have just seen would you change your answer to the preceding question. A. No, it very definitely states that this is a
112 monomeric compound, vinyl chloride, which is entirely different from the resin which you mentioned called polyvinyl chloride.

Q. Well -- A. Polyvinyl chloride cannot copolymerize with a polester resin.

Q. Can a vinyl chloride or vinylidene chloride copolymerize? A. Yes.

Q. Doesn't column 16 refer to vinyl chloride? A. Column 16 refers to vinyl chloride.

Q. And in view of what you have just said, can't that copolymerize with a polyester resin? A. Vinyl chloride can but the other cannot.

Q. Mr. Newell, what do you see in column 16 opposite "F"? A. Vinyl chloride, and this can copolymerize.

Q. And that is exactly what I asked you? A. Yes.

Q. With respect to the molded laminated product which is formed by the process of Simon, et al., if that product were to be used for a purpose in which it were desirable to have a resilient foam polyurethane layer rather than a rigid polyurethane layer, would it be obvious to one
113 working in this field to substitute a resilient and flexible layer for the original layer?

MR. DURHAM: I object to that. I think that question, using the term "obvious" in its context, is invading the province of the Court.

THE COURT: Well, the witness, I think, is perfectly capable of answering it. Of course, it invades the province of the Court, but since this is an equity hearing the Court pays no attention to those things that it should ignore. You may answer that question. Would it be obvious or not?

THE WITNESS: In order to produce a housing, a protection device such as given here in Simon, why if he had a resilient foam in here with a movable part it would be entirely contrary to the teachings of Simon; it would not give the protection.

MR. ARMORE: Mr. Newell, I don't believe you heard my question. You haven't answered my question.

Read the question.

Reporter reading: "Q. With respect to the molded laminated product which is formed by the process of Simon, et al., if that product were to be used for a purpose in which it were desirable to have a resilient foam polyurethane layer rather than a rigid polyurethane layer, would it

be obvious to one working in this field to substitute a resilient and
114 flexible layer for the original layer?

THE WITNESS: We have enough knowledge today to put a resilient foam in place of a rigid foam, yes. We can do that today.

THE COURT: Could it be done then?

THE WITNESS: I doubt it.

BY MR. ARMORE:

Q. In view of the evidence that has been already presented to the effect that -- I withdraw that.

If the art were familiar with both rigid and resilient polyurethane foams you agree that it would be obvious to substitute one for the other in the method of Simon, et al.? A. Yes.

Q. If one working in this art does not necessarily desire the benefit of a fiber reinforcement in the lining or the skin disclosed in the product and the process of Simon, et al., do you agree that it would be clear and obvious to one working in this field to omit or leave out the fiber reinforcement from the skin? A. I don't believe that you get a composition with sufficient strength and sufficient support to --

Q. Your --

THE COURT: One minute. Let him finish his answer.

THE WITNESS: To make the housing, et cetera, as given by Simon
115 without the benefit of the fibre-glass which Simon has given in
every example.

BY MR. ARMORE:

Q. Mr. Newell, if one did not necessarily desire or require that degree of rigidity --

THE COURT: Would he in that state of affairs depend upon this patent at all?

MR. ARMORE: Your Honor, I suggest that this patent --

THE COURT: I know, but you are repeating that question again. Now, if that former answer wasn't sufficient go ahead and repeat it.

MR. ARMORE: I would like to have this marked as defendant's exhibit 4 for identification.

THE DEPUTY CLERK: Defendant's Exhibit No. 4 is marked for identification.

(Defendant's Exhibit No. 4 was marked for identification.)

THE COURT: Has counsel seen it?

MR. ARMORE: I am going to give counsel a copy.

BY MR. ARMORE:

Q. Mr. Newell, are you familiar with that patent?

THE COURT: Identify the patent. Give the name and the number.

BY MR. ARMORE:

116 Q. Would you give the name of that patent?

THE COURT: Please tell me what you have in your hand, Mr. Witness.

THE WITNESS: I have U. S. Patent 2,753,642, July 10, 1956.

THE COURT: To whom?

THE WITNESS: George C. Sullivan, Hollywood, California. Gun Stock of Expanded Cellular Plastic Material.

* * * * *

THE COURT: This has not been introduced into evidence, and
117 under the most primitive principles of law you are not permitted
to question him about it until it has been admitted.

Do you object to the admission of this?

MR. DURHAM: I was just looking it over to see if we had any familiarity of it. We were given no notice of it in response to our interrogatories and I think it would be appropriate to object to it.

THE COURT: Well, you can make your objection and I will reserve decision on it.

MR. ARMORE: Well, Your Honor, I offer this patent into evidence at this time as defendant's exhibit 4.

THE COURT: Decision reserved. It is marked for identification.

* * * * *

119 BY MR. ARMORE:

Q. Mr. Newell, may we go back and I would like to ask you is the disclosure in Simon, et al., necessarily limited exclusively to a housing for radar equipment? A. I understood it was not limited.

120 Q. May I call your attention --

THE COURT: One minute. Let him answer now.

THE WITNESS: The first sentence in Simon says:

> "This invention relates to improved methods for making enclosures, housings, and the like, for electrical apparatus, and like equipment."

BY MR. ARMORE:

Q. Does that necessarily limit it to radar equipment? A. No, but it mentions it is special for that.

Q. Since it is intended for use -- Since the disclosure that you have just referred to indicates the possible use as a housing, would that also suggest the possible use of this material for packaging purposes, for example, generally rather than exclusively as a housing? A. Oh, I am sure it could be used for packaging material.

Q. And if it were used for packaging material might it not be desirable under certain conditions to have a resilient material? A soft material rather than a hard material? A. I don't believe so. It would lose its shape if it did.

Q. If the packaging material were intended to act as a shock absorber or a protective packaging material possibly inside an outer rigid package, could this material usefully be a soft, resilient material? And I am referring now to the material in the patent of Simon, et al.

121 A. Simon gives rigid foams all the time. Simon does not give a single resilient foam.

Q. That is correct, but on the other hand, Simon does disclose a laminated molded product which is used in a sense for protective purposes, for packaging purposes? A. Yes, but

Q. That is true, isn't it? A. Yes, but --

THE COURT: One minute.

THE WITNESS: I was going to say that Simon discloses a strong, hard protective object.

BY MR. ARMORE:

Q. But on the other hand, would you not agree that if one skilled in this art wanted to use this same material for other protective purposes, soft protective purposes rather than hard protective purposes, that it would be obvious to one so skilled to use soft materials rather than hard materials? A. It would not be the teaching of Simon to use any soft protection materials.

MR. ARMORE: I believe that is all, Your Honor.

THE COURT: Have you any redirect? Make it brief, please.

MR. DURHAM: No redirect, Your Honor.

122 THE COURT: Both sides have finished now?

MR. DURHAM: Yes, Your Honor.

MR. ARMORE: Yes, Your Honor.

THE COURT: Very well.

The Court wishes to have you exchange briefs within twenty days subsequent to the receipt of the transcript.

Reply briefs may be allowed by the Court upon prompt application.

MR. DURHAM: Thank you.

MR. ARMORE: Your Honor, may I inquire as to whether the briefs are requested simultaneously?

THE COURT: I said "exchanged" and the exchange means simultaneously. That is what I intended to say. Anyhow, that makes it clear.

MR. ARMORE: That means I cannot submit my brief?

THE COURT: No, you will trade briefs. Then if there is something in his brief that you think ought to be answered that is not contained in your brief tell me about it and I will probably allow you more time and the same for the counsel for the plaintiff.

MR. ARMORE: I just wanted to be absolutely certain.

MR. DURHAM: With or without proposed findings --

THE COURT: Yes, proposed findings of fact and conclusions of law and an order.

THE DEPUTY CLERK: He did not introduce plaintiff's exhibit 8 --
123 that was that mold -- and 10, the mold that has been over there (indicating).

MR. DURHAM: I meant to offer them in evidence.

THE COURT: It is just an oversight. They may be marked in evidence.

THE DEPUTY CLERK: Plaintiff's Exhibits No's. 8 and 10 are received in evidence.

(Plaintiff's Exhibits No's. 8 and 10 were received in evidence.)

THE COURT: Court now stands adjourned until tomorrow morning at 10:00 o'clock.

(Whereupon, at 3:10 p.m., the trial of Civil Action No. 2763-61, Hudson Foam Plastics Corporation v. David L. Ladd, Commissioner of Patents, was concluded.)

[Filed June 28, 1963]

EXCERPTS FROM PLAINTIFF'S EXHIBIT NO. 1 – ORIGINAL SPECIFICATION, CLAIM 13 AND DRAWINGS

FOAMED POLYESTER RESIN LAMINATED PRODUCTS

The present invention relates to novel laminated products and, more particularly, to laminated products comprising one or more layers of foamed polyester resins united with one or more layers of another material.

Many different types of polyester resins, made by esterifying polycarboxylic acids with polyhydric alcohols, are known. These resins have been cast or extruded to form films, they have been molded into shaped products, used as coating and impregnating materials, etc. More recently, a method of converting certain of these resins into light weight, expanded or foamed materials has been disclosed and claimed in a copending patent application, Serial No. 420,744, filed April 2, 1954, by Christopher L. Wilson and Oscar Shuffman. In the referred-to patent application one method of making the foamed resin product is to take a polyester resin which is a reaction product of adipic acid and diethylene glycol, said resin having an acid number between 0 and 20 and a hydroxyl number of between about 20 and 100, mix the resin with a mixture of toluene di-isocyanate-2, 4 and 2, 6, a small amount of water and a tertiary amine catalyst, and permit the reaction which results to proceed so that a light weight resilient, foamed product is formed.

All of the foamed products made as described in the above referred to patent application of Wilson and Shuffman, as well as any other polyester foamed material, can be utilized in the novel materials of the present invention.

Although resilient, foamed polyester resins, made, for example, as described in the Wilson and Shuffman application, have properties generally similar to those of foam rubber, it has been found that the new resin materials have many properties which are superior to the foam rubber product. Foam rubber, for example, cannot be successfully laminated to other materials with a sufficiently firm bond to stand the stresses of hard usage. It is inherently too easily torn so that bonds made with an adhesive soon fail. Also, if an attempt is made to heat seal a layer of foam rubber to another thermoplastic material, the foam rubber disintegrates. Thus, even though foam rubber has been found to be highly successful in cushioning and general upholstering, it has not been able to be successfully adapted to many other uses that are indicated for a material having the resiliency and softness possessed by foam rubber.

One object of the present invention is to provide novel laminated materials made from foamed polyester resins.

Another object of the invention is to provide novel upholstering materials.

Another object of the invention is to provide improved cushioning materials of laminated construction.

Another object of the invention is to provide novel laminated materials comprising one or more layers of an expanded, resilient material and one or more layers of a film-forming thermoplastic resinous material.

A further object is to provide methods of making improved laminated materials including resilient, expanded materials.

The invention will now be described in more detail with reference to the accompanying drawing wherein like parts are designated with the same numbers.

Fig. 1 is a perspective view of one form of laminated material of the present invention with a portion of one layer thereof turned back upon itself.

Fig. 2 is a perspective view of another embodiment of a material of the present invention.

Fig. 3 is an elevation cross sectional view illustrating one step in the manufacture of one type of laminated article made in accordance with the present invention.

Fig. 4 is a partial perspective view of the article made in accordance with the process illustrated in Fig. 3.

Fig. 5 is a perspective view of another type of laminated article made in accordance with the present invention.

Fig. 6 is a cross section elevation view illustrating a step in a molding process in accordance with the present invention.

Fig. 7 is a cross sectional elevation view of still another type of laminated article of the present invention.

A feature of the invention is the provision of novel laminated materials having many new commercial uses, comprising one or more layers of foamed, expanded, low density polyester resin firmly united to one or more layers of other materials.

In accordance with the present invention it has been found that foamed polyester resins have properties which enable them to be joined to surfaces of many other materials such as sheets or films of thermoplastic resinous materials such as polyvinyl chloride, polyethylene, other polyester resins, natural and synthetic rubbers, cellulose acetate, cellulose nitrate, polystyrene, other polyvinyl resins and the like. It is also possible to laminate the foamed polyester resins to relatively rigid materials such as glass, wood and metals and also to fabrics of natural or synthetic fibers.

A laminated article comprising a layer of a foamed polyester resin made as described in the aforementioned Wilson et al application and a sheet of polyvinyl chloride can be made as follows. Referring to Fig. 1, one surface 2 of a sheet 4 of the foamed resinous material is coated with a film 6 of a polyester resin in the non-expanded state. For example, the resin may be one made by esterifying a dibasic acid such as succinic, adipic, or azelaic acid and a glycol such as di-, tri-, or polyethylene glycol and then reacted with a diisocyanate to give an adhesive of regulated curing properties and flexibility. The under surface 8 of the sheet 10 of polyvinyl chloride is coated with a film 12 of the same polyester resin. The two coated surfaces are pressed together and permitted to cure at room temperature. The curing process takes from a few minutes to several hours depending upon the particular chemical composition of the adhesive. When completely cured, the two materials will be found to be firmly joined together. The laminated article can be flexed and crumpled without destroying the bond.

In a similar manner, sheets of the foamed material can be firmly bonded to thin films or sheets of many other flexible synthetic resinous materials such as polyethylene, polyester resins, polyurethanes, other vinyl plastics such as copolymers of vinyl chloride and vinyl acetate, polystyrene, and also to superpolyamides. Using the same bonding technique, the foamed material can also be bonded to woven cotton, woolen or synthetic fibre cloth and natural or synthetic rubber.

Laminated articles can also be made comprising a layer of the foamed polyester resin and a rigid material such as glass. A sheet of foamed polyester resin may be bonded to a sheet of glass by coating a surface of the sheet of foamed material and a surface of the glass with films of the polyester resin-diisocyanate mixture in liquid form as described in the previous example, placing the coated surfaces together and allowing to cure.

A different type of laminated article comprising a layer of the foamed polyester resin and a layer of flexible thermoplastic resinous material can be made by the following process. Referring now to Fig. 2, a thin sheet 14 of a thermoplastic resinous material, such as polyethylene, is placed on top of a sheet 16 of the foamed polyester resin with no adhesive between the two layers. This assembly is placed on the lower platen 17 of a high frequency dielectric heat sealing machine. The upper platen of the machine comprising a plurality of metal bars or rods 18 arranged in any desired configuration such as shown in Fig. 3, is pressed down into the upper surface of the soft, yielding "sandwich" until only a short distance separates the upper and lower platens. The assembly of polyethylene sheet and foamed polyester resin layer is thus arranged in a series of convolutions 20. Current is applied to the machine for about 2 to 5 seconds using about 2 KW at 27 megacycles, and the upper platen is raised free. As shown in Fig. 4, the polyethylene sheet has become fused to the layer of foamed resin along the strips 22 which were contacted by the lower ends of the metal bars 18 of the upper platen and the article assumes the regular convoluted appearance shown. Drawing together of the folds of the layer of foamed material causes it to become convoluted on both surfaces. 5 KW of power can be applied for briefer periods of time.

It will be apparent that convolutions of almost any desired surface pattern can be impressed into the material using the method described above. For example, the article can be given a quilted appearance.

Laminated material, made as described above, has many uses in the upholstery and cushioning field. The bond produced is extremely tough and, since no stitching is required, durability is greatly enhanced. Any of the thermoplastic film-forming resinous materials can be bonded to the foamed polyester resin in the manner described. For example, polyvinyl chloride sheet material bonds even better than polyethylene.

Articles of many different forms and ~~adopted~~ adapted to a variety of uses, can be made by heat-sealing a sheet of the foamed polyester resin to a sheet of unfoamed thermoplastic resinous material as described above. Referring now to Fig. 5, a sheet 24 of polyvinyl chloride can be heat-sealed around a peripheral edge strip 26 to a layer 28 of the polyester foam to form a cosmetic applicator.

It is also possible to make laminated articles of intricate form out of the polyester foam, by a molding process. Referring to Fig. 6, two halves 30a and 30b of a steel mold 32 are provided with an interior coating layer 34 of uncured polyester resin. The halves of the mold are assembled and the mold is partially filled with a reaction mixture capable of forming the polyester foam as described in aforementioned application Serial No. 420,744. As reaction proceeds in the mixture it expands to fill the mold with the foamed resin 36. The molded product is then allowed to cure for a period of time, this period usually being at least one hour. The mold halves are parted and the laminated article stripped therefrom. Other resinous materials, such as polyvinyl chloride, can be used instead of the polyester resin to coat the interior of the mold.

In this case the resin coating is [in the] cured [state or plymerized] before introducing the polyester foam mix into the mold.

Two similar layers of foamed [diisocyanate modified] polyester [of the character aforesaid] resin can also be laminated together. As shown in Fig. 7, juxtaposed surfaces of two layers 38 and 40 of the foamed material can be firmly joined together by coating them with a thin layer 42 of [diisocyanate modified] polyester resin adhesive, pressing the coated layers together and curing the adhesive.

CLAIM 13

13. A method of making a laminated material of pre-determined shape comprising lining a mold with a film of a resinous film-forming material, partially filling said mold with a reaction mixture of substances capable of producing a resilient, foamed polyester resin, permitting said resin mixture to react, form a foam and to cure, and stripping the resulting laminated product from the mold.

* * * * *

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Fig. 1.

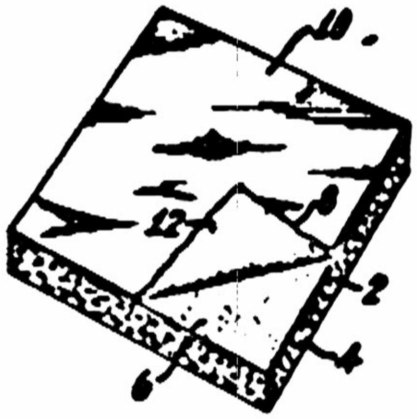


Fig. 2.

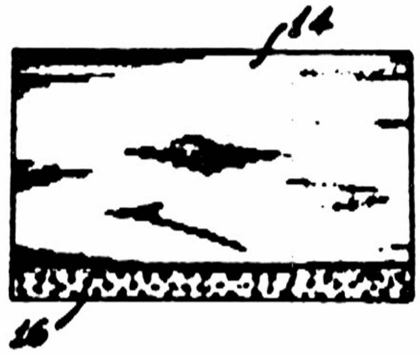


Fig. 4.

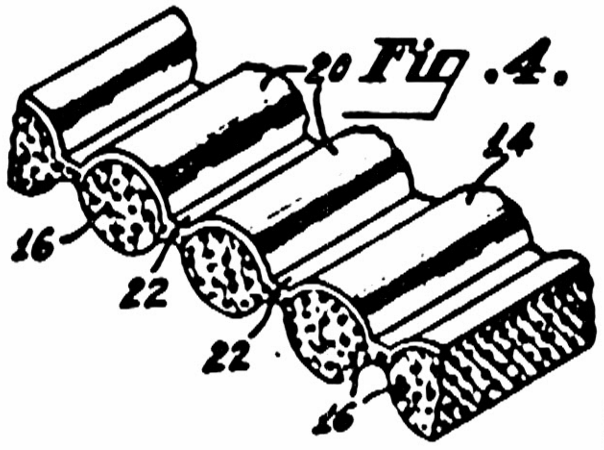


Fig. 3.

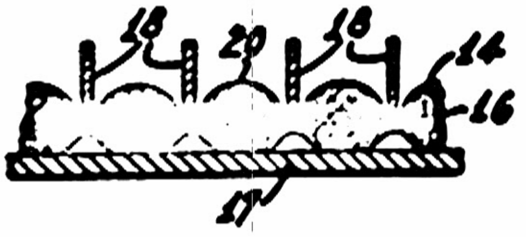
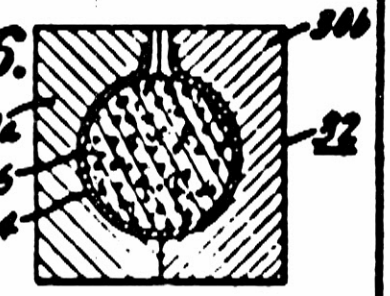


Fig. 6.



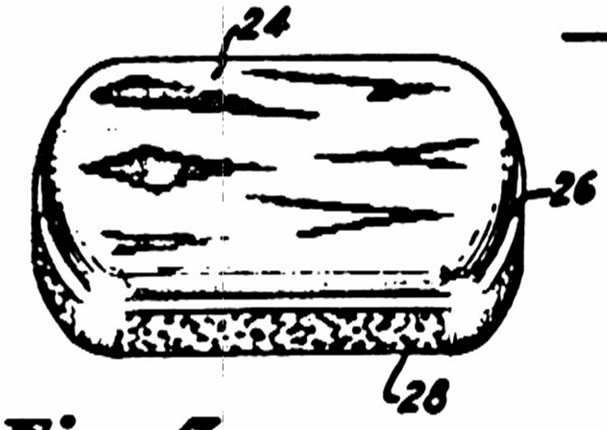


Fig. 5.

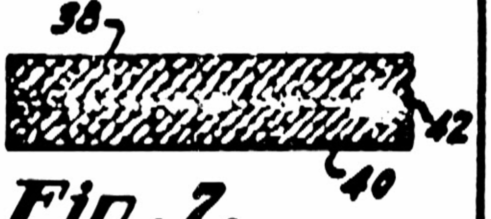


Fig. 7.

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BY
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ATTORNEY

United States Patent Office

2,961,418

Patented Nov. 22, 1960

2,961,418

CELLULAR POLYESTERURETHANE PRODUCT AND PREPARATION OF SAME

Christoper L. Wilson, Sloatsburg, and Oscar Shuffman, Yonkers, N.Y., assignors to Hudson Foam Plastics Corporation, a corporation of New York

No Drawing. Filed Apr. 2, 1954, Ser. No. 420,744

12 Claims. (Cl. 260—2.5)

This invention relates to improved expanded resinous materials and, more particularly, to foamed or expanded materials made from polyester resins.

Polyester resins are made by esterifying polycarboxylic acids with polyhydric alcohols. These resins have gone into widespread use as coating materials, molded products and adhesives. It has also been known that polyester resins can be reacted with polyisocyanates or polyisothiocyanates to produce materials having pronounced flexibility.

It has now been found that certain polyester resins can be reacted with certain di-isocyanates in the presence of certain catalysts to produce greatly improved resilient, expanded or foamed products generally similar to foam rubber but having desirable properties not possessed by foam rubber.

One object of the present invention is to provide improved resilient, expanded materials.

Another object of the invention is to provide novel and improved materials made from polyester resins.

Another object of the invention is to provide an improved process of making light weight, resilient, expanded materials from polyester resins.

Another object of the invention is to provide light weight, resilient, expanded materials having improved sound insulation properties.

Another object of the invention is to provide light weight, resilient, expanded materials having improved resistance to heat.

Another object of the invention is to provide light weight, resilient, expanded materials having improved sound insulation properties.

Another object of the invention is to provide light weight, resilient expanded materials having improved cushioning properties.

Another object of the invention is to provide foamed cushioning materials having improved resistance to burning.

Another object of the invention is to provide foamed resinous materials having improved toughness and tensile strength.

The invention will now be described in more detail.

A principal feature of the present invention is the preparation of an improved light weight, resilient, foamed or expanded material by reacting a polyester resin made from a dibasic acid, such as succinic, adipic or azelaic acid, having more than one carbon atom between the carboxyl groups, and a glycol selected from the class consisting of di-, tri-, and polyethylene glycols, said di-, tri, and polyethylene glycols being referred to elsewhere herein by the single term "polyethylene glycol", with a di-isocyanate, such as toluene di-isocyanate, in the presence of a catalyst in the form of a tertiary organic amine. The number and size of the pores may be controlled by including various amounts of material, such as water, which reacts with isocyanates liberating gases, and also by utilizing foam stabilizers in the reaction.

Examples of manufacture of improved materials falling within the scope of the present invention will now be given.

Example 1

The manufacture of polyester resins of many different types is well known. Satisfactory materials for use in the present invention may be made by esterifying a dibasic acid with a glycol by heating with, if desired, an added acidic catalyst or by cross-esterification of a dialkyl ester of a dibasic acid with a glycol in the presence, if necessary, of a catalyst. The last traces of water or alcohol in the resin are then removed by some convenient method such as vacuum treatment at elevated temperatures.

30 g. of a resin, comprising adipic acid condensed with diethylene glycol and having an acid number of 1 and a hydroxyl number of 42, and being in the form of a thick syrupy liquid, are mixed with 7.5 cc. (9.15 g.) of toluene di-iscoyanate-2, 4, and 0.05 cc. triethylamine, 0.5 cc. water and 0.5 cc. diethylamine oleate as a foam stabilizing agent.

The entire mixture is placed quickly in a mold and the reaction is permitted to proceed. The mixture foams due to liberation of carbon dioxide gas and the material expands to many times its original volume. The reaction is nearly complete in about 2 hours but is allowed to continue for about 24 hours to enable the product to set to a completely non-tacky and light, soft, resilient material.

Although the product resembles foam rubber, it has certain desirable properties not possessed by foam rubber. Material made by the process of Example 1 contains both discrete and connected cells. It is soft and resilient but does not recover its shape quite as rapidly as foam rubber when deformed by pressure. It is therefore better suited for damping of shock and its sound deadening and heat insulating properties are also generally superior to foam rubber in these applications. It also resists temperatures considerably higher than foam rubber without sustaining permanent damage. It melts but does not readily ignite when seared with an open flame.

The various physical properties of the product made as described in the above example, for example, resilience, toughness, softness, size of pores, etc., can be varied by varying the relative proportions of the ingredients and by making certain substitutions in the ingredients, themselves. These are discussed in more detail later.

Polyester resins which have been found suitable for use in the present invention are those made by reacting a polyethylene glycol with a dibasic acid containing more than one carbon atom between the carboxyl groups. The polyester resin may have an acid number up to about 20 and a hydroxyl number between about 20 and 100 and still give a satisfactory product. Di-isocyanates which have been found preferable to use in the reaction are toluene di-isocyanate-2,4 or 2,6 or mixtures of the two. These are the cheapest commercially available di-isocyanates at the present time. Technical grade toluene di-isocyanate has been found especially suitable. The density and texture of the product may be varied, however, by using small additional amounts of other isocyanates and di-isocyanates. The polyester resin and the di-isocyanate can be used in the proportions of about 30 g. resin to 5 to 9 cc. of di-isocyanate. The weight of this ingredient which should be mixed with 30 g. of resin is about 6 to 11 g. The grams of toluene di-isocyanate required for stoichiometric reaction with 30 grams of polyester having a given acid and hydroxyl number is the value of the expression

$$(\text{acid number plus hydroxyl number}) \times 0.0466$$

As applied to Example 1 above wherein the polyester has an acid number of 1 and a hydroxyl number of 42, the amount of toluene di-isocyanate required for stoichiometric reaction with 30 grams thereof was

$$(1+42)\times 0.0466=2\text{ gms.}$$

The amount of toluene di-isocyanate actually used according to Example 1 was 9.15 gms., which is 4.57 times the amount required for stoichiometric reaction with the polyester. The number of times by which the amount of toluene di-isocyanate employed exceeds the amount required for stoichiometric reaction with the polyester in question likewise is given in connection with the remaining examples which designate the acid number and hydroxyl number of the polyester.

Catalysts which can be used in the foaming reaction are tertiary amines of which a number of typical examples are: pyridine, collidine, lutidine, methyl morpholine, triethylamine and β-diethylaminoethyl acetate. There may also be used salts of these amines with long chain fatty acids, for example, oleic and ricinoleic acids, as well as esters other than acetates of hydroxyamines, such as β-diethylaminoethanol. Reaction products of these hydroxy-tertiary-amines with isocyanates may also be employed. These are commonly known as urethanes. The speed of the reaction between resin and di-isocyanate depends upon the strength and the amount of the base which is selected. Thus, by choosing bases of different strengths, the reaction speed may be varied as desired. The amount of catalyst which is required varies so greatly with the particular catalyst, as well as with the other components used, that no general rule as to specific amounts can be given. In general, sufficient catalyst should be used to cause the reaction to be about 80% or more complete in 2 hours and substantially complete in about 24 hours. It is believed, however, that the reaction continues very slowly for some time even after the product is complete and ready for use. It is sufficiently complete for all practical purposes, however, after about 24 hours, if performed according to the examples.

The amount of water, or other ingredient reacting with isocyanates to liberate a gas, is that which is required to liberate enough gas to produce foam of desired density. When water is used, the gas liberated is carbon dioxide. The larger the amount of water used, the lower the density of the foam produced. The water reacts with the di-isocyanate to produce a stoichiometrical amount of carbon dioxide gas (i.e., 18 g. of water, 1 gm. mol. wt., reacts with an excess of di-isocyanate to produce 44 g. or 22.4 liters, also 1 gm. mol. wt., of carbon dioxide).

The foam stabilizer can be omitted entirely. The amount used depends upon the degree of coarseness (size of bubbles) desired in the product. The maximum useful amount which has been found desirable is about 5% by weight of the entire composition. Higher proportions do not produce any important improvement. The size of the bubbles can also be varied by the use of different foam stabilizers. Examples of foam stabilizers which have been found particularly effective are: mixtures of diethylamine, triethylamine,

$$C_6H_5NHCO_2CH_2CH_2N(CH_2CH_3)_2$$

or

$$CH_3C_6H_3[NHCO_2CH_2CH_2N(CH_2CH_3)_2]_2$$

with a long chain fatty acid such as oleic acid or ricinoleic acid. Non-ionic wetting agents such as

$$CH_3(CH_2)_7C_6H_4O(CH_2CH_2O)_{15}H$$

(Igepal CA–630), or inorganic salts of ricinoleic acid which disperse in the reaction mixture may also be used. Where the foam stabilizer is a tertiary amine compound it may serve both as stabilizer and catalyst in the reaction depending on the relative amounts of amine and fatty acid.

Example 2

30 g. of a polyester resin made from adipic acid and diethylene glycol and having an acid number of 20 and hydroxyl number of 28, 7.6 cc. of technical toluene di-isocyanate, which is 4.1 times the amount required for stoichiometric reaction with the polyester, 0.52 cc. water, and 0.6 cc. triethylamine oleate are mixed together rapidly for 30 seconds, placed in a mold and allowed to expand. The foamed product is dry enough to use in about 24 hours.

Example 3

30 g. of a polyester resin made by reacting adipic acid and diethylene glycol and having an acid number of 18.5 and hydroxyl number of 20, 7.6 cc. of technical toluene di-isocyanate, which is 5.17 times the amount required for stoichiometric reaction with the polyester, 0.52 cc. water and 0.9 cc. of oleate of

$$CH_3C_6H_3[NHCO_2CH_2CH_2N(CH_2CH_3)_2]_2$$

are mixed and allowed to expand to form a foamed product as in the previous examples.

Example 4

30 g. of a polyester resin made by reacting adipic acid and diethylene glycol and having an acid number of 18.5 and hydroxyl number of 20, 7.5 cc. of a commercially available toluene di-isocyanate comprising a mixture of the -2,4 and the -2,6 varieties, which is 5.1 times the amount required for stoichiometric reaction with the polyester, 0.5 cc. water, 0.5 cc. triethylamine and 0.05 cc. Igepal CA–630 are mixed and allowed to expand in a mold as in the previous examples. A low density, expanded, resilient product is formed.

Example 5

A polyester resin made from adipic acid and diethylene glycol and having a hydroxyl number of 28 and an acid number of 20 (100 g.), technical toluene di-isocyanate (27.5 cc., which is 4.4 times the amount required for stoichiometric reaction with the polyester), benzidine red dye pigment (0.25 g.), methylmorpholine (2.8 cc.), diethylamine ricinoleate (1.86 cc.) and water (1.86 cc.) are mixed mechanically and poured rapidly into a mold. The mass foams up to many times its bulk and sets to a soft, resilient pink foam.

Example 6

A polyester resin made from succinic anhydride and polyethylene glycol 400 having a hydroxyl number of 26 and an acid number of 20 (30 g.), toluene di-isocyanate (technical, 7.5 cc., which is 4.3 times the amount required for stoichiometric reaction with the polyester), water (0.52 cc.), sodium ricinoleate solution (50%, 0.5 cc.) and collidine (0.6 cc), are mixed rapidly by mechanical means. The product foams rapidly and overnight produces a white resilient product.

Example 7

A polyester resin made from azelaic acid and diethylene glycol and having a hydroxyl number of 44 and an acid number of 16 (30 g.), technical toluene di-isocyanate (7.5 cc., which is 3.28 times the amount required for stoichiometric reaction with the polyester), diethylamine oleate (0.5 cc.), sodium ricinoleate (50%, 0.5 cc.), 2-cyanoethyl 2-diethylaminoethyl ether (0.5 cc.) and water (0.52 cc.) are mixed rapidly and allowed to expand.

Example 8

A polyester resin made from adipic acid and diethylene glycol (30 g.), technical toluene di-isocyanate (7.5 cc.), 2-morpholinylethyl phenyl carbonate (1.05 cc.) and a water suspension of dispersed phthalocyanine blue pigment (12%, 0.6 cc.) are rapidly mixed and allowed to react to give a blue foam.

Example 9

A polyester resin made from dimethyl adipate and diethylene glycol in the presence of a lead oxide catalyst and having a hydroxyl number of 41 and an acid number of 1.5 (30 g.), 2-(2-morpholinylethyl)-tetrahydropyran (1.0 cc.), aqueous potassium ricinoleate (50%, 1.0 cc.) are rapidly mixed with commercial toluene di-isocyanate (7.5 cc., which is 4.62 times the amount required for stoichiometric reaction with the polyester) and allowed to expand.

Referring to the foregoing examples, the amount of toluene di-isocyanate used ranged from 3.28 (Example 7) to 5.17 (Example 3) times the amount required for stoichiometric reaction with the polyester employed.

Foamed products made as above described have a density of about 0.15 to about 0.025 g./cc. depending upon the particular ingredients chosen and their proportions. The products are generally soft and resilient and superior to foam rubber in cushioning properties and durability. They have many uses such as in upholstery, mattresses, pillows, sound insulating materials and many other applications where shock absorbing materials are required. They also have many special uses such as oil-resistant filters and filters for such widely varied materials as air, blood and milk.

If the reaction mixture used to make the foamed product is squirted or otherwise introduced into either a closed or open mold of any desired shape, it can be used to make light weight, resilient products such as toys, containers, life preservers, pontoons, buoys and the like. The surface of the mold is coated with a mold lubricant, such as zinc stearate or wax, and the mold is merely given a charge of the reaction mixture. External heat is not usually necessary. The molded product has a sealed surface permiting it to be used in articles without further treatment or covering.

Although the products of the present invention are more resistant to heat and to burning than many other similar products, they can be given increased fireproof properties by addition of chlorine or phosphorus containing materials. Organic chloro-compounds can be used, for example, chlorendic acid. The reaction mix may contain up to about 5% by weight of the chlorinated compound. Instead of a simple chlorinated compound, up to about 5% by weight of a phosphate such as tricresyl phosphate or tris chlorethylphosphite can be used instead in the foam-producing mixture.

With no extra coloring matter added, the foamed products of the invention have a natural creamy, almost white, color suitable for most commercial applications. If colored products are desired, however, the color can be incorporated in any one of several ways. For example, as described in some of the examples, finely divided pigments, either organic or inorganic, can be incorporated into the mix when it is prepared, just prior to the molding operation. The material can also be dyed after the molding operation is complete by treating it at the desired temperature in a solution of almost any of the dyes commonly used to dye synthetic fibers such as cellulose acetate or Dacron. Unlike other foamed resilient materials, the materials of the present invention are sufficiently tough and firm to be stitched to woven cloth or other sheet materials. Thus it is possible to use these materials in interliners, upholstery padding and many other similar applications.

We claim:

1. A method of making an expanded, resilient, cellular material having discrete and connected cells comprising reacting a viscous liquid polyester resin which is the reaction product of a polyethylene glycol and an organic dicarboxylic acid containing more than one carbon atom between the carboxyl groups, with toluene diisocyanate and water in the presence of a tertiary amine catalyst, said polyester resin having an acid number of about 1–20 and a hydroxyl number of about 20–100, the amount by weight of said diisocyanate ranging from approximately 3.28 to approximately 5.17 times the amount required for stoichiometric reaction with said polyester resin and the amount of water being sufficient to react with the said toluene diisocyanate that is in exces of that stoichiometrically reactive with said polyester to produce carbon dioxide gas for providing a lightweight foam.

2. A lightweight, cellular, resilient, resinous product made by the method of claim 1.

3. A method of making an expanded, resilient, cellular material having discrete and connected cells comprising reacting a viscous liquid polyester resin which is the reaction product of a polyethylene glycol and a dibasic acid selected from the group consisting of succinic, adipic and azelaic acids, with toluene diisocyanate and water in the presence of a tertiary amine catalyst, said polyester resin having an acid number of about 1–20 and a hydroxyl number of about 20 to 100, the amount by weight of said di-isocyanate ranging from approximately 3.28 to approximately 5.17 times the amount required for stoichiometric reaction with said polyester resin and the water being sufficient in amount to react with the said toluene di-isocyanate that is in excess of that stoichiometrically reactive with said polyester to produce carbon dioxide gas for providing a lightweight foam.

4. A method according to claim 3 wherein said polyester resin, said toluene diisocyanate, said water and said tertiary amine are mixed simultaneously.

5. The method of claim 3 wherein said tertiary amine catalyst is an alkyl tertiary amine catalyst and further including a foam stabilizing agent in said reaction mixture.

6. A lightweight, cellular, resilient, resinous product made by the method of claim 3.

7. A method according to claim 3 in which said dibasic acid is azelaic acid and said polyethylene glycol is diethylene glycol.

8. A method according to claim 3 in which said dibasic acid is adipic acid and said polythylene glycol is diethylene glycol.

9. A lightweight, cellular, resilient, resinous product made by the method of claim 8.

10. The method of claim 5 and further including chlorendic acid amounting to about 5% by weight of said reaction mixture.

11. A method according to claim 5 in which said dibasic acid is adipic acid and said polyethylene glycol is diethylene glycol.

12. A method according to claim 5 in which said dibasic acid is azelaic acid and said polyethylene glycol is diethylene glycol.

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[Filed June 28, 1963]

PLAINTIFF'S EXHIBIT NO. 7

APPENDIX

DEFINITIONS OF TERMS WHICH MAY BE USED AT THE TRIAL

POLYCARBOXYLIC ACID: an organic acid having two or more acid groups, commonly called carboxylic groups, which may react with two different molecules of an alcohol. These carboxylic groups are represented by the designation COOH.

A typical polycarboxylic acid which may be utilized in the invention of Claim 28, and other already allowed claims, is adipic acid, an organic acid which has two carboxylic groups (COOH) in the molecule. Succinic acid and azelaic acid are examples of other acids which may also be used, and each of these acids, like adipic acid, possesses two carboxylic groups in the molecule.

POLYHYDRIC ALCOHOL: any alcohol having two or more alcohol (-OH) groups, each of which may combine with one carboxylic (COOH) group of an acid.

A polyhydric alcohol having two -OH groups may combine with a single molecule of acid having two carboxylic groups, or it may combine with one carboxylic group of each of two different carboxylic acids. When an alcohol and an acid react, they normally produce a compound called an ester and a molecule of water.

Typical polyhydric alcohols which may be used with this invention are di-, tri-, and polyethylene glycols, and trimethylolpropane.

ORGANIC DIISOCYANATE: Typical examples of these materials are toluene diisocyanate, meta-toluene diisocyanate, 2,4 toluene diisocyanate, 2,6 toluene diisocyanate, and polyisocyanates. The organic diisocyanates here involved are either 2,4 toluene diisocyanate or 2,6 toluene diisocyanate or mixtures of both. The organic diisocyanate compounds may be referred to, at the trial, as toluene diisocyanate, generally, or by the common abbreviation, TDI.

POLYESTER RESIN: As used in the invention before this Court, the term "polyester resin" means the resinous reaction product resulting from the reaction of a polyhydric alcohol and a polycarboxylic acid. Such a reaction product is not fully reacted, and the measure of its reaction may be expressed as its "acid number" indicating the amount of acid which remains free to react, and by its "hydroxyl number" which is a measure of the number of -OH (alcohol) groups which are still available for reaction.

TERTIARY AMINE CATALYST: These catalysts are commonly used in polyurethane foam reactions to accelerate the reaction between the polyester resin and the toluene diisocyanate.

Typical examples of tertiary amine catalysts which may be used with the invention are N-methyl morpholine and triethylamine.

POLYESTER-BASED POLYURETHANE FOAM: The product resulting from the reaction of toluene diisocyanate with a polyester resin, and water, in the presence of a tertiary amine catalyst.

The products are called "foams", because the reaction is violent and is characterized by frothing and rapid expansion of the reaction mass. Upon curing, the reaction product is cellular.

Some polyester-based polyurethane foams may be resilient and relatively soft, as foam rubber; other polyester-based polyurethane foams may be rigid and have great compressive strength. Resilient foams are different from rigid foams.

RESINS: A synthetic resin may be of two general types, thermoplastic or thermosetting.

A thermoplastic resin is one which is rendered soft and moldable when heat is applied. Typical thermoplastic resins are celluloid, polyethylene and various polyvinyl chlorides. Some resin materials are thermoplastic both before and after they have been cured, or permitted to set.

The polyester resins utilized in making polyester-based polyurethane foams used in the invention of Claim 28 are thermoplastic.

A thermosetting resin is one which is initially thermoplastic, but which is rendered hard or rigid by the application of heat. Examples of thermosetting resins are the usual "bakelite" resins utilized in the manufacture of handles for kitchen ware, electrical sockets and electrical switch housings.

Resins may be "pure" and "unfilled", that is, they do not contain any filling material as wood flour, mineral powder or fibrous material such as fiber glass. In the "pure" and "unfilled" form, they may be used to form transparent and translucent films and for casting or molding various objects.

A "filled" resin contains wood flour, mineral powder or fibrous materials. Filling materials are added to resins for the purpose of imparting different properties to the original resin material, as increased heat resistance, strength, or bulk of the resin mass.

A "filled" resin may be termed "reinforced" to make it more rigid by embedding in it a layer of textile fabric or felted material as a mat of glass fibers. A reinforced resin possesses increased tensile strength.

Films or thin layers of resin materials may be flexible or rigid depending on the resinous materials from which the films or layers were made, and whether filling or reinforcing material were included.

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May 19, 1953 E. SIMON ET AL **2,639,252**

METHOD OF MAKING HOUSING FOR ELECTRICAL APPARATUS

Filed Feb. 17, 1949 4 Sheets-Sheet 1

Fig. 1

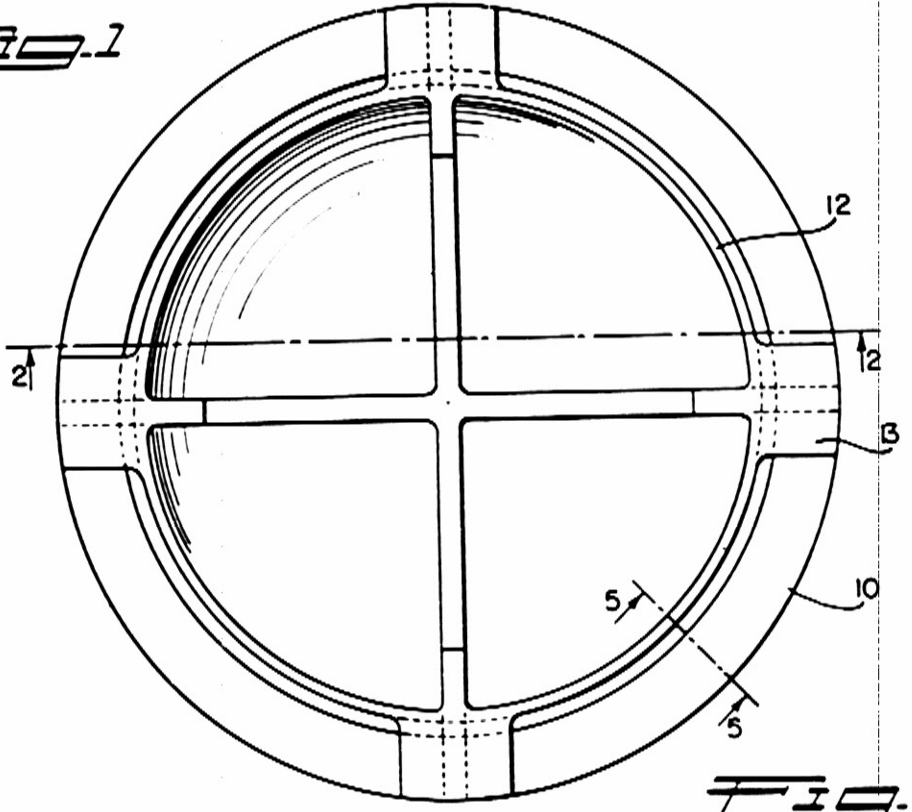


Fig. 5

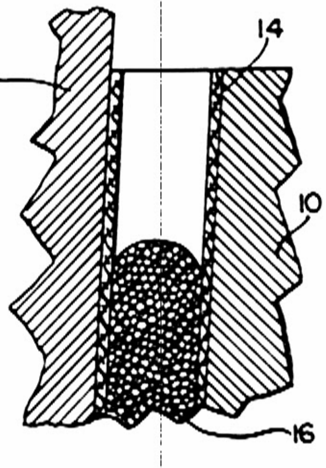
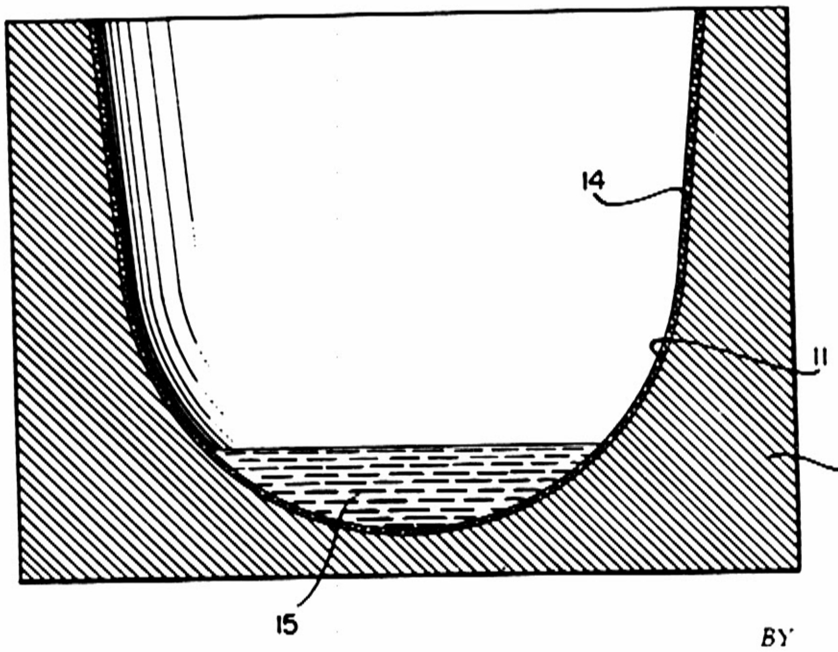


Fig. 2



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METHOD OF MAKING HOUSING FOR ELECTRICAL APPARATUS

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Fig-3

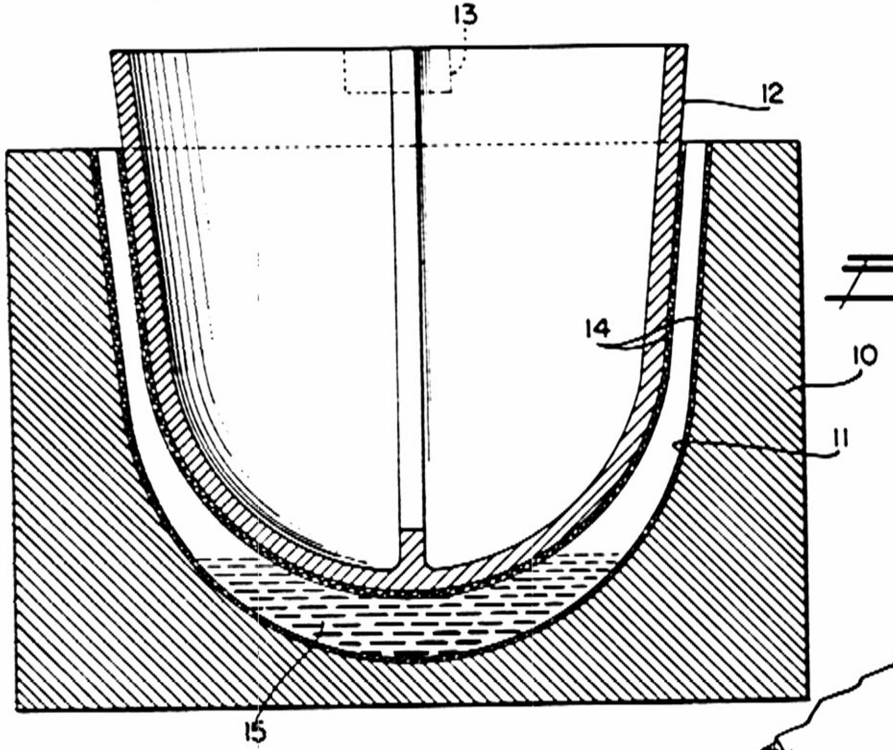


Fig-9

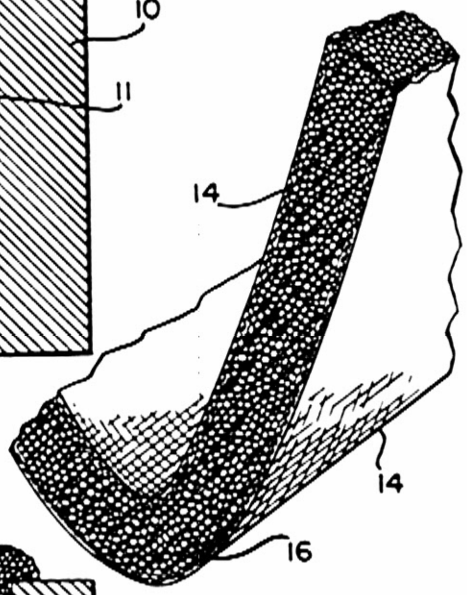
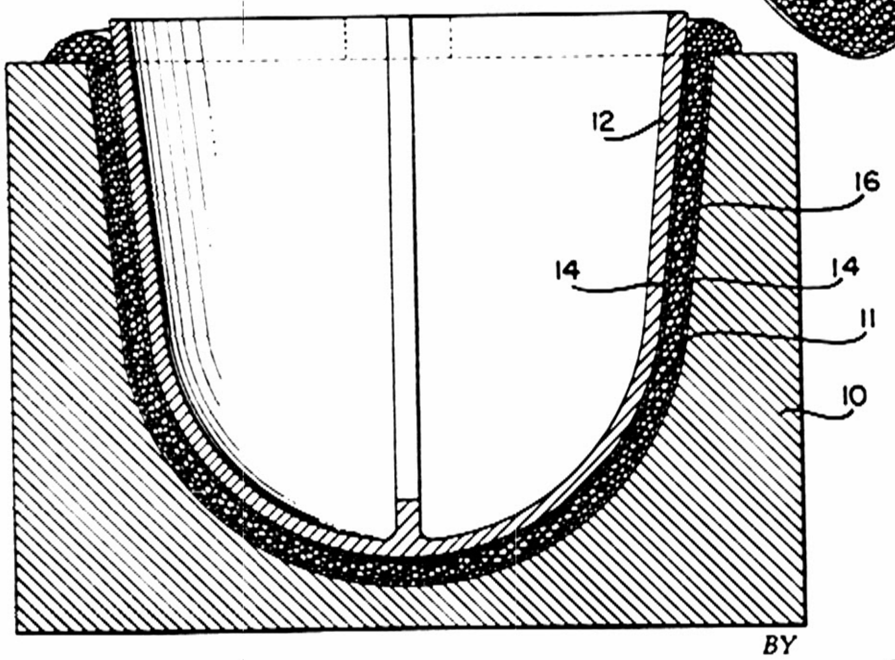


Fig-4



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METHOD OF MAKING HOUSING FOR ELECTRICAL APPARATUS

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Fig. 8

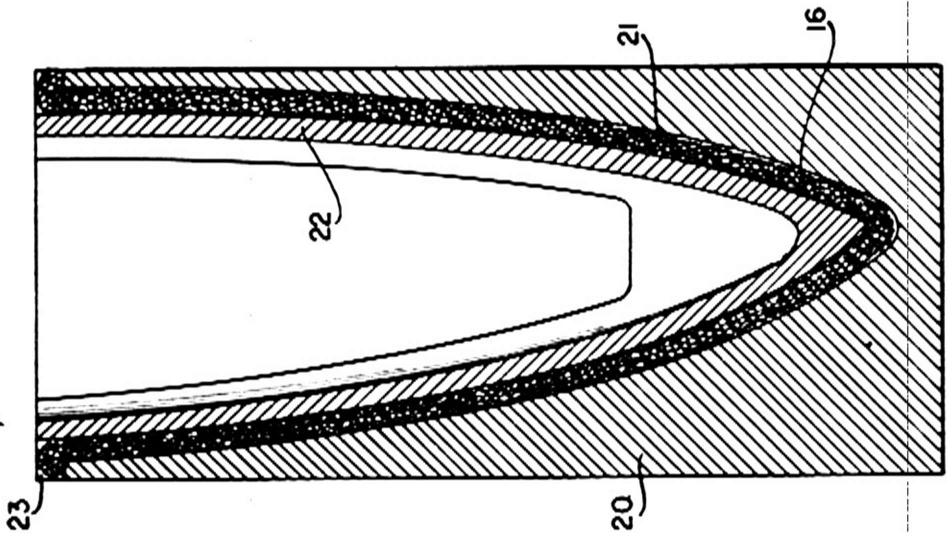


Fig. 7

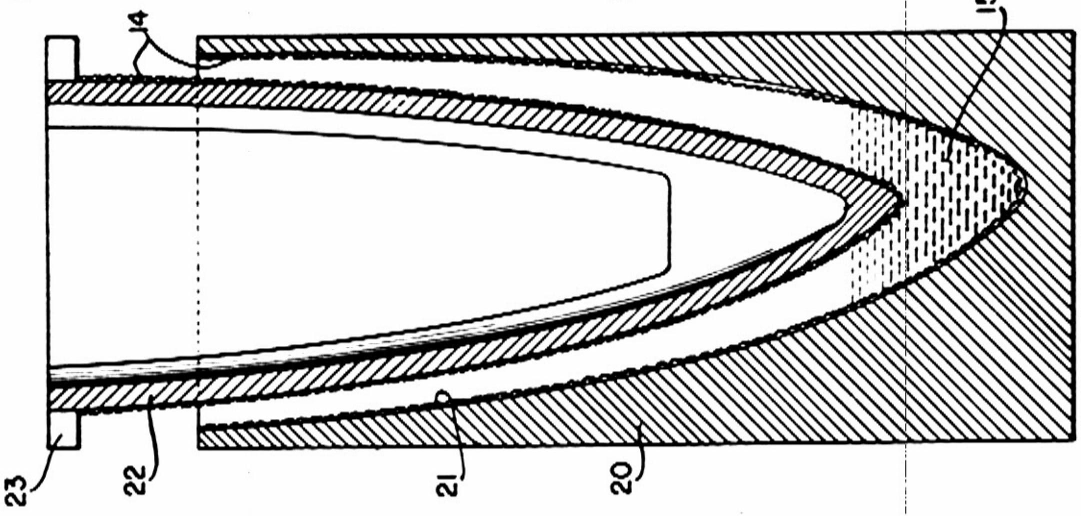
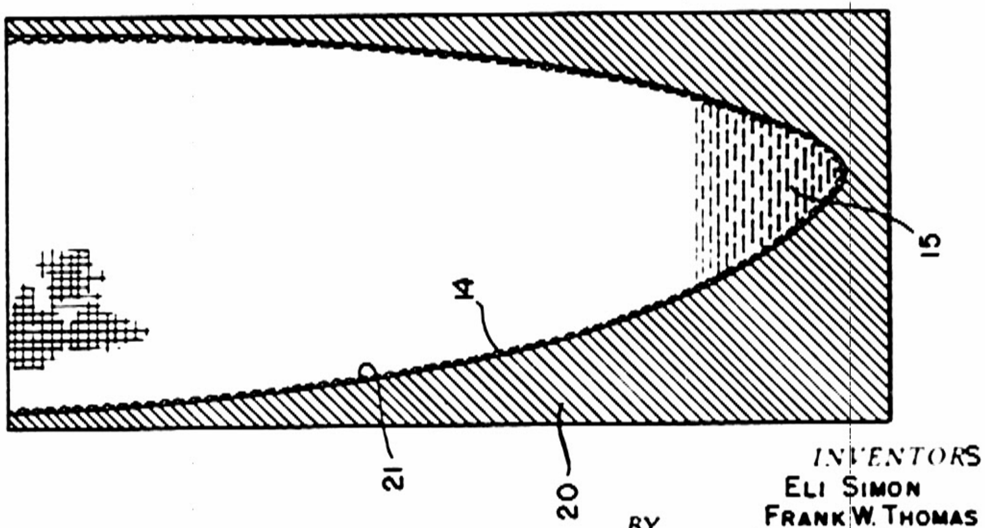


Fig. 6



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METHOD OF MAKING HOUSING FOR ELECTRICAL APPARATUS

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Fig. 10

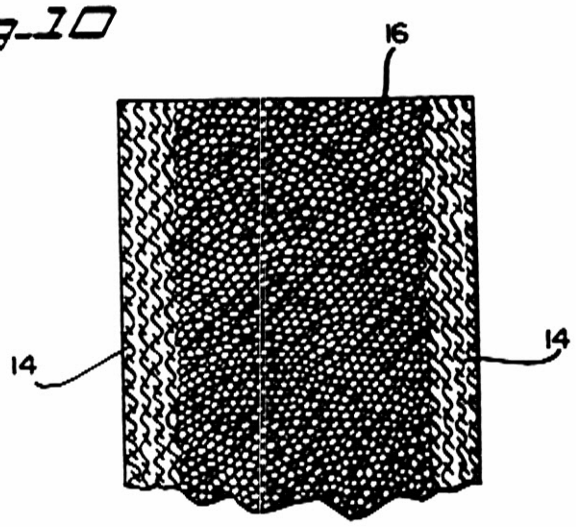
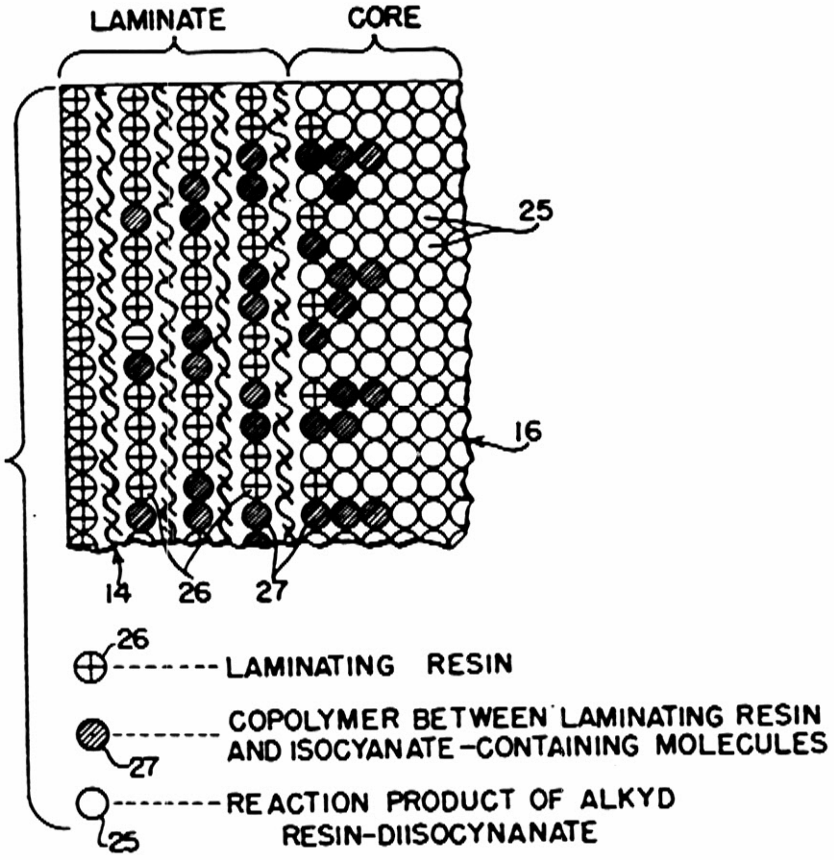


Fig. 11


LAMINATE
CORE
25
16
14
26
27
26
⊕ LAMINATING RESIN
27
COPOLYMER BETWEEN LAMINATING RESIN AND ISOCYANATE-CONTAINING MOLECULES
25
REACTION PRODUCT OF ALKYD RESIN-DIISOCYNANATE

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UNITED STATES PATENT OFFICE

2,639,252

METHOD OF MAKING HOUSING FOR ELECTRICAL APPARATUS

Eli Simon, Los Angeles, Frank W. Thomas, Burbank, and Edward H. Burkart, North Hollywood, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.

Application February 17, 1949, Serial No. 76,952

8 Claims. (Cl. 154—83)

This invention relates to improved methods for making enclosures, housings, and the like, for electrical apparatus, and like equipment.

The products, or devices, of the invention have many applications, being useful in protecting, housing and supporting numerous classes of objects and instrumentalities, particularly where there is need for dielectric properties coupled with high strength and low weight characteristics. While we do not intend to imply any restrictions on the uses or applications of the products, the invention is particularly well suited for the manufacture of "radomes" or housings for radar equipment, such housings constructed in accordance with the invention possessing excellent dielectric, strength and vibration resisting characteristics, and being highly "transparent" or conductive of micro-waves of radar transmission. In the prior methods of constructing such devices, a core of previously produced honeycomb or foamed material was cut and shaped as required and then laminated between plastic impregnated pre-formed and pre-cured laminated "skins" of fibre glass fabric or the like, employing suitable laminating resins and jigs. Such operations were time consuming and, therefore, costly, and were not productive of uniform results. Furthermore, the physical strength characteristics of the products were relatively low due to the fact that the skin material and core material were, in effect, joined at interfaces by a mechanical locking action, rather than through chemical union, of the resin employed, there being no true bonding or fusion of the skin and core materials.

It is, accordingly, an object of the present invention to provide a simple, rapid, and commercially practical method for fabricating or producing laminated objects or devices embodying one or more skins and an internal core, and to provide relatively inexpensive products or devices of this class having superior strength characteristics and micro-wave transmission characteristics.

Another object of the invention is to provide a method of the character referred to wherein the core layer or lamination is formed or produced between the skin laminations at the time the housing or object is manufactured, thereby completely eliminating the necessity for separately manufacturing the core material, cutting the same to size or shape, and fitting it to the skin material and thereby assuring uniform continuous merger or joinder of the skin and core laminae. The operation or step of producing a foamed cellular core is simultaneous with the

bonding or joinder of the core and the skin laminations, thus greatly simplifying the procedure and assuring more uniform results.

Another object of the invention is to provide a method of the class referred to in which the chemical reaction accompanying the simultaneous foaming and formation of the cellular core and the joinder of the core and skins, produces pressure and exothermic heat to hold the skins against the walls of the mold and to shape the same while at the same time aiding in the polymerization and/or curing of the laminating resin. Thus the method, which preferably includes a post-curing of the product at slightly elevated temperatures, avoids the necessity of separately pre-forming and pre-curing the laminated skins, of separately making the core material, of separately tailoring the core material, and of separately bonding the "tailored" core material to the pre-formed laminated skins, and yet the method is productive of uniform products of greater physical strength.

It is another and important object of the invention to provide a method of the character described wherein the laminating resin in the skins and the reactant alkyd resin-polyisocyanate material for producing the cellular core unite chemically and copolymerize during the reaction of the core material mixture thereby producing a laminated structure or product in which the material of the laminations and the core material copolymerize in zones of joinder of some thickness to obtain the greatest strength possible. In the earlier methods of manufacturing such laminated structures and objects there has been no true chemical union between the core materials and the laminated skins and there have, therefore, been abrupt changes in the physical characteristics of the planes of joinder, thereby materially lowering the strength of the product. In the structures of the invention where the cellular core material is reacted between the laminated skins impregnated with the unpolymerized resin, the reactant mixture of the core material and the laminating resin of the skins intermingle and unite chemically in zones which may consist primarily of copolymers between the laminating resin and the resin-polyisocyanate mixture of the core, with molecules of both the resin and the mixture interspersed therein. These interfacial zones of mean or intermediate composition are coextensive with the marginal areas of the core and with at least some of the laminations of the skin, thereby strengthening the structure by including in the skin laminae some of the alkyd resin-polyisocyanate foam with its inherent high strength characteristics. Thus the method and product of the invention are differentiated from the laminated structures of the prior art where the core material and skin laminations are joined at the interfaces by mechanical locking which is primarily adhesion of the core to the skin lamination by a resin applied to or impregnated in the skin laminae and merely contacting the surfaces of the previously formed and machined core, leaving a distinct interfacial plane or connection of low strength.

A further object of the invention is to provide a method for producing "sandwich-type" housings and other objects incorporating foamed or cellular plastic cores which utilizes and requires only simple and inexpensive equipment. The only apparatus essential to the method are the male and female mold parts, platens, or the like, and an appropriate oven for the post-curing of the products.

Other objectives and features of the invention will become apparent from the following detailed description of a typical manner of performing the method in the production of two housings, or the like, throughout which description reference will be had to the accompanying drawings wherein:

Figure 1 is a plan view of the assembled mold employed in the method;

Figure 2 is a vertical sectional view taken substantially as indicated by line 2—2 on Figure 1 illustrating the female mold part with the outer skin arranged therein and containing the unreacted mixture for producing the core;

Figure 3 is a view similar to Figure 2 showing the male mold part substantially arranged in place and carrying the other laminated skin;

Figure 4 is a view similar to Figure 3 illustrating the core in the foamed or cellular condition, showing the manner in which the reactant core material holds the skin against the mold surfaces;

Figure 5 is an enlarged fragmentary sectional view taken at line 5—5 on Figure 1 showing the reacting core material rising in the mold cavity between the two skins;

Figure 6 is a vertical sectional view of another female mold part with the skin arranged therein and containing the unreacted core forming material;

Figure 7 is a view similar to Figure 6 showing the male mold part carrying the inner skin laminations and being arranged in place;

Figure 8 is a view similar to Figure 7 showing the male mold part in the final position and illustrating the core material in the foamed or cellular state where it holds the skin against the mold surfaces;

Figure 9 is an enlarged fragmentary perspective view of the housing or product made in accordance with the method as illustrated in Figures 6, 7 and 8;

Figure 10 is an enlarged fragmentary sectional view illustrating the several laminations of one of the skins of the product; and

Figure 11 is a diagrammatic view on a greatly enlarged scale illustrating the skin and interfacial area of the product and showing the interspersion of the cellular core material and laminating resin.

The method provided by this invention is useful in making objects and devices varying greatly in intended use or application. For example, the devices may be simple panels, sheets, or covers, or may be housings, casings or containers of simple or complex shape for electrical devices of different kinds. As above pointed out, the devices or structures of the invention transmit radar energy, etc. with a minimum of loss and we will herein describe the method as employed to construct shells, housings, or domes for radar transmitting and/or receiving equipment, it being understood that this is only one typical application of the invention.

The method of the invention, as illustrated in Figures 1 to 5 inclusive, may be said to comprehend the general steps of providing outer laminating material or skin material **14** on the surfaces of a mold **10—12**, introducing a reactant alkyd resin-polyisocyanate mixture **15** into the skin-lined mold cavity, allowing the mixture to react to form a foamed or cellular core **16** between and bonded with the skin laminations **14**, and then preferably post-curing the resultant laminated structure at slightly elevated temperature.

In Figures 1 to 5 inclusive, the mold includes a female part **10** having a central cavity **11** and a male part **12** adapted to conform generally to the cavity. The upper end of the mold cavity **11** remains open to atmosphere at all times while the lower end of the cavity is closed and, in the particular case illustrated, is spherically concave, it being apparent that the cavity may have practically any required configuration. The male mold part **12** may be a recessed or hollow member to be of reduced weight and in the typical case illustrated is shaped so that its external surface is substantially parallel with and equally spaced from the wall of the cavity **11** when the mold parts are in their final positions. The part **12** is adapted to extend upwardly beyond the upper surface of the part **10** and its projecting portion has spaced radially projecting ears or lugs **13**. These lugs **13** are adapted to rest on the upper end of the mold part **10** to support the part **12** and, if desired or necessary, spacers may be associated with the lugs to obtain the desired spacing between the walls of the cavity **11** and the surface of the male mold part **12**. Furthermore, if desired, studs, clamps, or the like, may be used to secure the lugs **13** to the mold part **10** and thus maintain the desired relative positions of the mold parts, although such details are not essential to the method of the invention.

The initial steps of the method, as practiced in accordance with Figures 1 to 5 inclusive, are the provision of the outer or skin materials **14** and the lining of the mold surfaces with these materials. The materials **14** used for this purpose will, of course, depend to a considerable extent upon the intended use of the product being manufactured. Where the product or housing is designed for the transmission of radar or microwave energy, the skin materials or laminations **14** may be fibre glass fabric, superimposed layers of non-impregnated or non-bonded fibre glass cloth, felt, fibre glass matting, or other materials that are substantially "transparent" to radar energy. While, in most cases it is preferred to employ a plurality of superimposed layers of such material **14** on the surfaces of the cavity **11** and mold part **12**, Figures 1 to 5 illustrate, for the sake of clarity only one layer or thickness of the fabric **14** of the class above named on each mold surface. Figure 10 illustrates on a much larger scale a portion of a housing, having a plurality of skin material layers or laminations **14**.

It is to be understood that in the following description of both manners of carrying out the method of the invention where we employ the expressions "skin fabric **14**," "skin material **14**," or the equivalent, we refer to multi-layer skins as shown in Figure 10 as well as the single layer skin. The skin materials **14** are arranged to completely cover the walls of the cavity **11** and the surface of the mold part **12** at least to the height or level where the housing is to be trimmed off or finished. In this manner of performing the method the skin materials **14** may either be preformed and prelaminated, that is impregnated with a laminating resin and then formed or shaped to fit their respective mold surfaces, the resin being cured so that the skin materials are substantially rigid and self-supporting, or the skin materials **14** may be unlaminated and without resin either cured or uncured in which case appropriate care is taken to arrange and support the soft unformed skin materials **14** on their respective mold surfaces. Where the skin materials **14** have a plurality of layers it is preferred to offset the edges of adjacent layers so that substantially uniform strength is obtained.

The next operation is the introduction into the lined mold cavity **11** of a suitable quantity of a reactant cellular plastic producing material or mixture **15**. Figure 2 illustrates a body of the liquid reactant mixture **15** in the lower portion of the cavity **11**, lined by the skin material **14**. It is prefered to employ a reactant alkyd resin-meta-toluene diisocyanate mixture of the class described and claimed in the copending application of Eli Simon and Frank W. Thomas, Serial No. 77,058, filed February 17, 1949, now Patent No. 2,591,884 granted April 8, 1952. The following are typical formulae of this case of reactant cellular plastic producing compounds:

Formula 1

	Grams
An alkyd resin having an acid number of 20 and a water content of 0.85% by weight obtained from the reaction of 4 mols trimethylol propane, 2.5 mols adipic acid and 0.5 mol phthalic anhydride	60
Meta-toluene diisocyanate, containing 2 grams ethyl cellulose having 7 centipoise viscosity and having from 46.8 to 48.5 ethoxyl content per 100 grams of the meta-toluene diisocyanate	40
Diallyl phenyl phosphonate	10
Benzoyl peroxide	0.50

Formula 2

	Grams
Alkyd resin of Formula 1	60
Meta-toluene diisocyanate, containing 2 grams ethyl cellulose having 100 centipoise viscosity and having an ethoxyl content of from 46.8 to 48.5% per 100 grams of the meta-toluene diisocyanate	40
Diallyl phenyl phosphonate	10
Benzoyl peroxide	0.5

Formula 3

	Grams
Alkyd resin of Formula 1 having an acid number of 20 and a water content of 0.85% by weight	30
Meta-toluene diisocyanate, containing 2 grams of ethyl cellulose having a viscosity of 100 centipoises and an ethoxyl content of from 48.0 to 49.5% per 100 grams of the meta-toluene diisocyanate	20
Zinc stearate powder	1½
Diallyl phenyl phosphonate	5
Benzoyl peroxide	0.25

In Formulae 1, 2 and 3 and in similar formulations the concentration range of the ethyl cellulose additive is from 0.03 gram to 15 grams for each 100 grams of the meta-toluene diisocyanate. The ethyl cellulose employed in such formulations may have an ethoxyl content range of from 45.0 to 49.5%, and a viscosity of 7 centipoises to approximately 200 centipoises with a preferable viscosity of approximately 50 to 100 centipoises. The reactant mixtures of these and similar formulations react at atmospheric pressure to greatly increase their volumes and to produce high strength, light weight cellular plastics having very small uniform cells. The cellular plastics thus obtained have high compressive strength, high tensile strength, and good shock and vibration resistance characteristics. Furthermore, it has been found that such cellular plastics are highly "transparent" to radar energy producing a minimum of attentuation losses. In fact, it has been found that all of the alkyd resin-diisocyanate cellular plastics of the classes herein described are effective in the transmission of such energy except those incorporating metallic leafing powders. Where it is required that the latter types of foamed plastics transmit radar energy the formulations may be readily changed by merely substituting any of the metallic soap powders hereinafter set forth for the metallic leafing powder component. The following formulae are typical of those incorporating metallic soap powders and metallic leafing powders:

Formula 4

	Grams
Alkyd resin of Formula 1	30
Polyisocyanate reagent containing meta-toluene diisocyanate and 0.065 mol of 2 methyl, 2-4 pentanediol for each mol of meta-toluene diisocyanate	20
Zinc stearate powder	1½
Diallyl phenyl phosphonate	5
Benzoyl peroxide	¼

Formula 5

	Grams
Alkyd resin of Formula 1	30
Polyisocyanate reagent containing meta-toluene diisocyanate and from 0.01 to 0.25 mol of toluene diamine for each mol of the meta-toluene diisocyanate	20
Aluminum leafing powder	2

The reactant mixtures of Formulae 4 and 5 are of the class described and claimed in the copending application of Eli Simon and Frank W. Thomas, Serial No. 71,037, filed January 14, 1949, now Patent No. 2,602,783.

Following the introduction of the reactant plastic material **15** into the lined female mold **10**, the male mold part **12** carrying its skin material **14**, is entered in the cavity **11** and properly positioned with respect to the mold part **10**. Figure 3 of the drawings shows the mold part **12** being entered into the cavity **11**. It will be observed that the reactant liquid alkyd resin-polyisocyanate mixture **15** is partially displaced upward by the mold part **12** and that the upper end of the mold cavity remains open to the atmosphere. A sufficient quantity of the reactant mixture **15** is provided in the mold to assure a full or adequate filling of the space between the lined walls of the cavity **11** and the covered or lined part **12** by the cellular plastic. In practice, the alkyd resin-polyisocyanate mixture reacts at atmospheric pressure to produce a multitude of small, generally uniform spherical gas filled cells throughout the entire core 16 and the foamed or cellular plastic mass or core 16 may rise in the mold space, as shown in Figure 5, to spill over the top of the mold assembly in the manner illustrated in Figure 4. While not essential, it is preferred to maintain the mold parts at a temperature of about 120° F. during the reaction of the core forming cellular material. The foam producing reaction of the material 15 is accompanied by the exothermic heat and pressure, the heat assisting in curing the resin and the pressure serving to urge the skins 14 firmly and evenly against the walls of the mold. Where the skin material 14 has been prelaminated and preformed, the cellular plastic 16 adheres to and bonds with the inner surfaces of the laminated material 14. The resin employed in the prelaminated skin material 14 is preferably compatible with the alkyl resin-polyisocyanate reactant mixture but the latter securely bonds with and adheres to practically all skin materials and the laminating resins employed therein and, in fact, strongly adheres to most materials. Where the skin materials 14 are prelaminated and preformed and contain polymerized cured resins or plastic, the material of the cellular plastic core 16 will not penetrate the skin materials 14 to any appreciable extent and will not engage the walls of the cavity 11 or the surface of the mold part 12. Therefore, upon completion of the reaction of the core 16 and following the initial setting and curing of the core material, the product or housing may be removed from the mold following withdrawal of the male mold part 12. The product or housing is then preferably post-cured at a temperature of from 125° F. to 225° F. for from 10 to 12 hours to continue polymerization of the reaction and thus obtain a stronger more heat stable core 16.

When the skin materials 14 are not prelaminated and not preformed but are in the nature of one or more layers of dry, porous, or soft fabric, felt or the like, the reactant alkyd resin-polyisocyanate liquid or plastic material 15 penetrates the skin materials 14 and therefore will reach the wall of the cavity 11 and the surface of the mold part 12. Accordingly, it is desirable in this case to coat or cover the surfaces of the mold with a parting material prior to arranging or positioning skin materials 14 in the mold so that the alkyd resin-polyisocyanate mixture will not adhere to the mold wall. Graphite, deposited from oil-dag, water-dag or alcohol-dag, or mineral oil, or the like, may be used as the parting material. Where the article being produced is to be used with radar equipment, it is preferred to use mineral oil, or the like, as a parting material. The penetration of the skin materials 14 by the reactant alkyd resin-polyisocyanate mixture 15 results in a particularly effective lamination or bonding of the several layers of the skins 14 and a strong uniform and continuous bonding or merger of the skins 14 with the cellular core 16. The material 15 that enters the skin 14 and that occupies the zones at the inner faces of the skins 14 reacts in the same manner as the material in the main mass of the core 16 to produce a cellular, high strength, low density plastic characterized by extremely small pores or cells of uniform size and shape. The foamed or cellular plastic coats embeds and bonds with the layers, strands, threads and fibres of the skin material 14 so that the skins are, in effect, cast or embedded in the self-same material that constitutes the core 16 with no plane or zone of contrasting or differing physical characteristics existing at the interfaces or planes of joinder of the core 16 and skins 14. This results in a product or structure of great strength, uniform composition and uniform physical characteristics and of uniform transparency to radar or micro-wave energy throughout. Upon completion of the initial reaction of the core 16 and after the skins 14 are cured so as to be self-supporting, the product or housing is removed from the mold and given a post-cure at a temperature of from 125° F. to 225° F. from 10 to 20 hours as previously described.

The housings or devices produced, as above described, each comprise a continuous one-piece core 16 of foamed or cellular plastic and internal and external skins 14 of fibre glass fabric, felt, or the like, laminated and impregnated with resin or plastic. The sandwich-type construction, or laminated construction, is exceedingly strong and yet has a very low density owing to the low density cellular plastic core 16. The products have good dielectric characteristics, and, as above pointed out, pass or conduct microwave energy, etc. with but slight loss. The products may be cut or machined as found necessary and it is usually preferred, or at least desirable, to trim off the rough or uneven upper or open ends of the housings to bring the housings to the desired size and shape.

The method of the invention, as illustrated in Figures 6 to 9 and 11, comprises, generally, substantially the same steps or operations as above described, except that the skin materials 14 are wet or saturated with a laminating resin prior to or upon being arranged on the surfaces of the mold 20—22.

The female mold part 20 has a recess 21 of the selected or required configuration and the male mold part 22 is shaped to conform to the recess and leave a mold space or cavity of the required thickness and shape. This mold cavity is at all times open at its upper end to the atmosphere and the male mold part 22 may be supported in the correct position on the part 20 by lugs 23 engaging the top surface of the part 20. In this particular mold arrangement it may be assumed that the parts 20 and 22 are elongate and that the housings or objects to be formed therein are elongate chambered or hollow members having somewhat curved side walls converging to a rather abrupt or sharp edge, although it is to be understood that the mold may be designed to produce objects of practically any shape.

The skin material 14 may be of the same nature as above described, that is, it may be one or more layers or plies of fibre glass fabric, fibre glass matting, felt, or the like, or combinations of such materials. However, in this manner or process of carrying out the invention the skin materials 14 are saturated or partially saturated with what we term a laminating resin prior to or at the time they are arranged on the surfaces of the mold 20—22 and the alkyd resin-diisocyanate reactant mixture 15 is allowed or caused to react in the mold space defined by the wet skin material 14 so that the foaming alkyd resin-diisocyanate product copolymerizes with the laminating resin to produce or provide in the product diffusion zones of cured or hardened resins. These diffusion zones, which are coextensive with the marginal portions of the core 16, as well as with some or all of the laminated or single ply skins 14, are areas whose compositions graduate or change gradually from substantially pure laminating resin to the substantially pure alkyd resin-diisocyanate reaction product of the core. One of these diffusion interfacial zones is illustrated diagrammatically, on an enlarged scale, in Figure 11, as will be more fully described below. To facilitate a fuller understanding of the copolymerizing action obtained when the material of the core 16 reacts in the mold space between the skins 14 which carry or are saturated with the laminating resin, we will describe several alkyd resin-diisocyanate reactant mixtures and several suitable laminating resins and the mechanism of the copolymerization of the same at the interfacial diffusion zones of the housing or product.

The alkyd resins which we preferably employ in the polyisocyanate reactant mixtures are the reaction products of polyhydric alcohols and polybasic acids unmodified or modified with oil and/or other resins and having an acid number of from 5 to 80, a water content of from 0.1% to approximately 3.0% by weight and having the following ratio range of the hydroxyl to the carboxyl groups in the alkyd resin reactants:

From 3 hydroxyl (OH):1 carboxyl (COOH)
To 4 hydroxyl (OH):5 carboxyl (COOH).

It is usually preferred to employ alkyd resins having an acid number of between 10 and 25 and wherein the ratio of the hydroxyl groups to the carboxyl groups is 2 to 1. The following formulae are suitable for preparing unmodified alkyd resins from polyhydric alcohols and polybasic acids, the ratios of the hydroxyl groups to the carboxyl groups in the alkyd resin reactants of these formulae being 2 to 1.

Formula A

	Mols
Glycerol	4
Adipic acid	2.5
Phthalic anhydride	0.5

Formula B

	Mols
Glycerol	2
1,4 butylene glycol	1
Adipic acid	2

Formula C

	Mols
Trimethylol propane	4
Adipic acid	2.5
Phthalic anhydride	0.5

In Formula A from 3 to 5 mols of glycerol, from 1.5 to 3 mols adipic acid and from 0.1 to 1.5 mols of phthalic anhydride may be used while in Formula C the practical operative range of proportions is from 3 to 5 mols trimethylol propane, from 1.5 to 3 mols adipic acid and from 0.1 to 1.5 mols phthalic anhydride. The following Formulae D and E are suitable for preparing unmodified alkyd resins from single polyhydric alcohols and single polybasic acids productive of resins suitable for use in the cellular plastic mixture.

Formula D

	Mols
Glycerol	4
Adipic acid	3

Formula E

	Mols
Trimethylol propane	3
Phthalic anhydride	2

The ratio of the hydroxyl groups to the carboxyl groups in the alkyd resin reactants of Formula D is 2(OH):1(COOH) and in Formula E this ratio is 9(OH):4(COOH). The following Formula F is an example of an oil modified alkyd resin suitable for employment in the reactant cellular plastic producing mixture, the ratio of the hydroxyl groups to the carboxyl groups in the alkyd resin reactant being 3(OH):3½(COOH).

Formula F

	Mols
Glycerol	1
Phthalic anhydride	1.5
Oleic acid	0.5

The following Formula G is an example of a natural resin modified alkyd resin suitable for incorporation in the cellular foamed plastic core material, the ratio of the hydroxyl to the carboxyl groups being 1 to 1.

Formula G

Glycerol	gram mol	1
Sebacic acid	do	1½
Resin copal	grams	100

We have found that the most satisfactory results are obtained when the water content range of the alkyd resin component of the diisocyanate alkyd resin reactant mixture is from 0.1% to 3.0% by weight without regard to the specific manner of incorporating the water in the mixture. In the typical examples herein set forth, it will be considered that the water component of the diisocyanate-alkyd resin reactant mixture is incorporated by dissolving a calculated amount of the water in the selected alkyd resin and suitably agitating the resin-water mixture so that the alkyd resin component will contain the selected proportion of water. However, as set forth in the copending application of Eli Simon and Frank W. Thomas, Serial No. 35,294, filed June 25, 1948, now Patent No. 2,577,279, the water may be incorporated in the reactant mixture in combination with a non-ionic wetting agent or by the use of one or more salt hydrates.

The isocyanate employed in the alkyd resin polyisocyanate reactant mixture is preferably meta-toluene diisocyanate. As described and claimed in the copending application of Eli Simon and Frank W. Thomas, Serial No. 50,007, filed September 18, 1948, now Patent No. 2,577,728, metallic soap powders may be incorporated in the diisocyanate alkyd resin reactant mixture to serve as foaming agent stabilizers and thus obtain superior results. The metallic soap powders that are effective for this purpose are metallic soap powders of fatty acids having from 12 to 20 carbon atoms including:

Zinc stearate
Aluminum stearate
Calcium stearate
Magnesium stearate
Magnesium hydroxy stearate
Barium stearate
Zinc laurate
Calcium oleate
Strontium stearate

The proportion of the metallic soap powder employed may vary considerably. Thus, it has been found that from ⅛ gram to 7½ grams of the selected metallic soap powder may be used for each 30 grams of the alkyd resin in the alkyd resin-meta-toluene diisocyanate reactant mixture.

The copending application of Eli Simon and Frank W. Thomas, Serial No. 77,056, filed on an even date herewith, now Patent No. 2,591,884, discloses the incorporation in the alkyd resin-meta-toluene diisocyanate-water system of high molecular weight thermoplastic film producing polymeric resin additives which serve as film stabilizers. These additives result in the production of foamed plastics having very small uniform cells and having superior physical strength. Furthermore, the additives permit the use of a higher water content in the alkyd resin-meta-toluene diisocyanate system, for example a water content of 5% by weight, thus reducing the density of the cellular plastic material. Further, it has been found to be particularly advantageous to employ the high molecular weight polymeric additives in the cellular plastic material of the cores where the product or articles of this invention are to be used in association with radar equipment.

The high molecular weight polymeric resin additives are soluble in the meta-toluene diisocyanate and may or may not react therewith. Included among these additives that are productive of a more effective small cell foamed plastic core material are:

1. Ethyl cellulose.—This polymeric resin has a molecular weight of approximately 130,000 and it is preferred to employ an ethyl cellulose having from 43% to 50% ethoxyl content. The best results have been obtained where the ethoxyl content is from 45% to 49.5% and where the viscosity is between 50 and 100 centipoises.
2. Polymeric chlorinated natural rubber.—This product has an average chlorine content of 67% and a preferred viscosity of between 125 and 1,000 centipoises.
3. Polymeric acrylate and methacrylate resins and their co-polymers (prepared by polymerizing lower esters of acrylic and methacrylic acid):
   a. Methyl methacrylate
   b. Propyl methacrylate
   c. Isobutyl methacrylate
   d. Butyl methacrylate
   e. Co-polymer of methyl acrylate and ethyl methacrylate.
4. Benzyl cellulose—formed by the reaction of benzyl chloride with alkali cellulose.
5. Polystyrene.
6. Polydichlorostyrene.
7. Natural rubber (polymeric isoprene) the molecular weight of natural rubber has been variously determined as ranging between 100,000 and 300,000.
8. Polyvinyl butyral.
9. Polymeric vinyl chloride—vinyl acetate copolymers:
   a. Containing approximately 87% vinyl chloride and 13% vinyl acetate and having a molecular weight of approximately 6,000 to approximately 25,000
   b. Containing from 90% to 95% vinyl chloride.
10. Polyvinyl acetate (produced by polymerization of vinyl acetate). The molecular weights of the polyvinyl acetate suitable for incorporation in the cellular plastic formulation range from approximately 10,000 to approximately 50,000.
11. Polyvinyl chloride (having an average molecular weight of approximately 5,000).

The concentration or proportion of the selected high molecular weight polymeric resin employed may be varied considerably. For example from 0.03 gram to 15 grams of the ethyl cellulose or from 5 to 20 grams of the chlorinated natural rubber may be used with each 100 grams of the meta-toluene diisocyanate as incorporated in the reactant cellular foamed producing mixture.

The cellular plastic core material employed in the method and product of the invention may be made flame resistant and self-extinguishing when once ignited by incorporating flame retardant additives in the alkyd resin-meta-toluene diisocyanate reactant mixture. Such additives are unsaturated alkyl esters of aryl phosphonic acids namely compounds having the general formula: $ArPO(OCH_2CR{:}CHR^1)_2$ where Ar represents aryl and alkaryl hydrocarbon radicals and R and R^1 are hydrogen and alkyl hydrocarbon radicals. Compounds of this character are described in United States Letters Patent No. 2,425,765 issued August 19, 1947, and include:

1. Diallyl phenyl phosphonate
2. Bis (methallyl) benzene phosphonate
3. Diallyl toluene phosphonate

These additives, in addition to imparting flame resistance and to decreasing flame propagation characteristics of the foamed cellular product, also serve to materially decrease the density of the foamed material. In practice, from 1 gram to 20 grams of the flame resistant additive may be employed with each 30 grams of the alkyd resin. Where such fire resistant additives are employed it may be found desirable to predissolve benzoyl peroxide in the additive in the proportion of approximately 5% by weight of the additive.

The following are typical examples of the alkyd resin-meta-toluene diisocyanate reactant formulations for the core forming mixture 15:

Example I

	Grams
Alkyd resin of Formula C having an acid number of 20 and a water content of 0.85% by weight	60
Meta-toluene diisocyanate containing 2 grams of ethyl cellulose, having a centipoise viscosity of 7 and an ethoxyl content of from 46.8 to 48.5 per 100 grams of meta-toluene diisocyanate	40
Diallyl phenyl phosphonate	10
Benzoyl peroxide	0.5

Example II

	Grams
Alkyd resin of Formula C having an acid number of 20 and a water content of 0.85% by weight	60
Meta-toluene diisocyanate containing 1 gram of ethyl cellulose, having a centipoise viscosity of 200 and an ethoxyl content of from 46.8 to 48.5 per 100 grams of the meta-toluene diisocyanate	40
Diallyl phenyl phosphonate	10
Benzoyl peroxide	0.5

Example III

	Grams
Alkyd resin of Formula C having an acid number of 20 and a water content of 0.85% by weight	60
Meta-toluene diisocyanate containing 0.03 gram ethyl cellulose of 100 centipoise viscosity and from 48.0 to 49.5% ethoxyl content per 100 grams of meta-toluene diisocyanate	40
Diallyl phenyl phosphonate	10
Benzoyl peroxide	0.5

Example IV

	Grams
Alkyd resin of Formula C having an acid number of 20 and a water content of 0.85% by weight	60
Meta-toluene diisocyanate containing 2 grams of ethyl cellulose of 100 centipoise viscosity and an ethoxyl content of 48.0 to 49.5% per 100 grams of meta-toluene diisocyanate	40

Example V

	Grams
Alkyd resin of Formula A having an acid number of 16 and a water content of 0.87% by weight	30
Meta-toluene diisocyanate	20
Zinc stearate powder	2
Diallyl phenyl phosphonate	5
Benzoyl peroxide	0.25

Example VI

	Grams
Alkyd resin of Formula C having an acid number of 20 and a water content of 0.85% by weight	30
Meta-toluene diisocyanate containing 5 grams of chlorinated natural rubber of 1,000 centipoise viscosity per 100 grams of the meta-toluene diisocyanate	20
Diallyl phenyl phosphonate	5
Benzoyl peroxide	0.25

Example VII

	Grams
Alkyd resin of Formula C having an acid number of 20 and a water content of 0.85% by weight	30
Meta-toluene diisocyanate containing 4 grams of benzyl cellulose per 100 grams of the meta-toluene diisocyanate	20
Diallyl phenyl phosphonate	5
Benzoyl peroxide	0.25

Example VIII

	Grams
Alkyd resin of Formula A having an acid number of 14 and a water content of 0.31% by weight	30
Meta-toluene diisocyanate	20
Aluminum stearate powder	1

Example IX

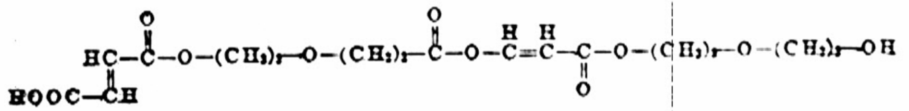
	Grams
Alkyd resin of Formula A having an acid number of 34 and a water content of 1.4% by weight	30
Meta-toluene diisocyanate	22½
Aluminum leafing powder	1½

Furthermore, the reactant core-forming mixture **15** may be of the character employed in the previously described form of the invention and of the kind set forth in Formulae 1 to 5 inclusive. When the article being produced is required to transmit radar energy it is not desirable or practical to incorporate metallic leafing powders in the formulations.

The above mentioned laminating resins applied to or impregnated in the skin materials **14** may be thermosetting plastic resins or blends or mixtures of thermosetting resins and thermoplastic resins. The laminating resins of the skin materials **14** are capable of copolymerizing with the foaming alkyd resin-diisocyanate reaction products to result in diffusion zones of cured or hardened resins, which zones are characterized by a gradual gradation in content from substantially pure laminating resin in the outer portions or laminae of the skins **14**, to intermediate areas at the interfaces of the core **16** and skins **14** containing laminating resin molecules, alkyd resin-diisocyanate reaction product molecules and molecules of the co-polymer between the laminating resin and the reaction product and thence to the substantially pure alkyd resin-diisocyanate reaction products of the core **16**. The nature of these diffusion zones, as we believe them to be constituted, is illustrated in Figure 11 which diagrammatically represents on a large scale a small area of a skin **14** and adjacent portion of the core **16** in cross section. In Figure 11, as indicated by the legends, the material of the core **16**, that is the reaction products of alkyd resin-diisocyanate mixture are represented by the circles **25**, the laminating resin molecules are represented by the circles **26** enclosing the crosses, while the co-polymer between the laminating resin and the isocyanate containing molecules are represented by the circles **27** enclosing the diagonal lines. It will be seen from an inspection of Figure 11 that the interfacial area, where the mass of the core **16** joins the innermost skin layer **14**, has substantially equal numbers of the three above named molecules **25**, **26** and **27**, while there is little or no penetration of the substantially pure core material molecules **25** into the skin **14** there are a considerable number of the co-polymer molecules **27** between the innermost skin layer **14** and the adjacent lamination **14**. The number of these molecules of the co-polymer gradually lessen in the succeeding laminations **14** until there may be none in the outermost skin lamination. The diffusion area or zones of graduated or merging physical composition and physical characteristics assure great strength in the laminated or sandwich-type product resulting in a product much superior to the typical laminated structures where there are distinct planes or limited sectional areas of abrupt change from one material to the other.

The laminating resins capable of copolymerizing with the reaction products of the alkyd resin and diisocyanate of the core **16** may be selected from substantially different classes of resins or compounds including:

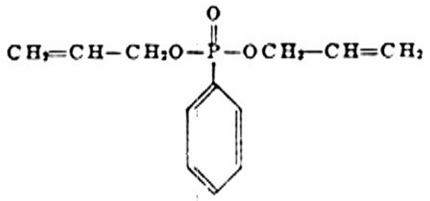
(*a*) Unsaturated polyesters containing more than one vinyl group per molecule so as to be capable of cross linking and forming insoluble thermosetting type resins. Included in this classification are the reaction products of maleic anhydride with a glycol such as di-ethylene glycol which, after the initial reaction are further heated, and condensed to yield the linear polyester:



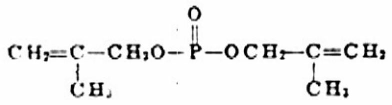
$$\underset{\underset{\mathrm{HOOC-CH}}{\|}}{\mathrm{HC}}-\overset{\overset{\mathrm{O}}{\|}}{\mathrm{C}}-\mathrm{O}-(\mathrm{CH_2})_2-\mathrm{O}-(\mathrm{CH_2})_2-\overset{\overset{\mathrm{O}}{\|}}{\mathrm{C}}-\mathrm{O}-\overset{\mathrm{H}}{\mathrm{C}}=\overset{\mathrm{H}}{\mathrm{C}}-\underset{\underset{\mathrm{O}}{\|}}{\mathrm{C}}-\mathrm{O}-(\mathrm{CH_2})_2-\mathrm{O}-(\mathrm{CH_2})_2-\mathrm{OH}$$

(*b*) Unsaturated alkyl esters of aryl phosphonic acids such as disclosed in United States Letters Patent No. 2,425,765 issued August 19, 1947. Included in this group are the following:

(1) Diallyl phenyl phosphonate

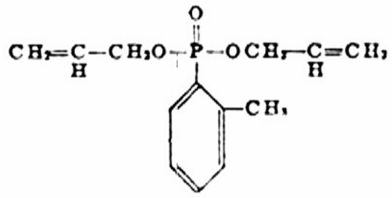


(2) Bis(methallyl) benzene phosphonate



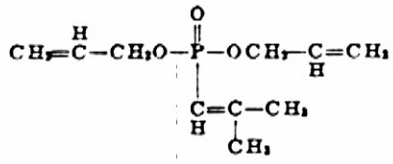
$$CH_2{=}\underset{CH_3}{C}-CH_2O-\overset{O}{\overset{\parallel}{P}}-OCH_2-\underset{CH_3}{C}{=}CH_2$$

(3) Diallyl toluene phosphonate



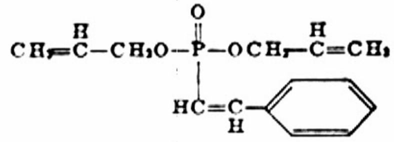
(*c*) Unsaturated alkyl esters of alkenyl phosphonic acids of the general class disclosed in the United States Letters Patent No. 2,425,766 issued August 19, 1947:

(1) Diallyl isobutene phosphonate

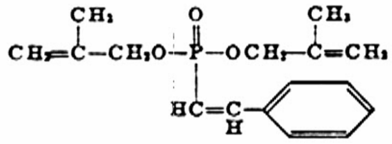


$$CH_2{=}\overset{H}{C}-CH_2O-\underset{\underset{\underset{H}{C}=\underset{CH_3}{C}-CH_3}{|}}{\overset{O}{\overset{\parallel}{P}}}-OCH_2-\underset{H}{C}{=}CH_2$$

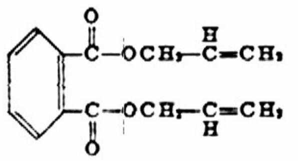
(2) Diallyl styrene phosphonate



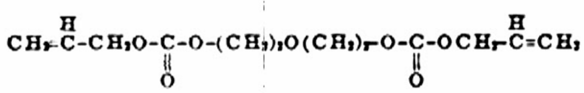
(3) Bis(methallyl) styrene phosphonate



(*d*) Diallyl phthalate

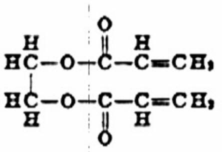


(*e*) Allyl, methallyl or crotyl glycol carbonates, such as bis(allyl)diethylene glycol carbonate:



$$CH_2{=}\overset{H}{C}-CH_2O-\underset{\underset{O}{\parallel}}{C}-O-(CH_2)_2O(CH_2)_2-O-\underset{\underset{O}{\parallel}}{C}-OCH_2-\overset{H}{C}{=}CH_2$$

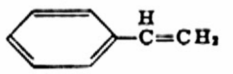
(*f*) Glycol diacrylate



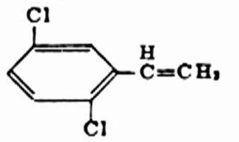
$$\begin{array}{l} H\overset{H}{C}-O-\overset{O}{\overset{\parallel}{C}}-\overset{H}{C}{=}CH_2 \\ H\underset{H}{C}-O-\underset{\underset{O}{\parallel}}{C}-\underset{H}{C}{=}CH_2 \end{array}$$

If desired, the laminating resin may comprise a blend or mixture of a selected unsaturated polyester, such as above named, and a monomeric compound which serves as a copolymerizing additive. For example, the unsaturated polyester between diethylene glycol and maleic anhydride with the polymerization carried to an acid number of from 10 to 40 may be mixed with any of the following thermoplastic monomeric vinyl compounds, each having one vinyl group per molecule to constitute the laminating resin.

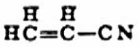
(*a*) Styrene (vinyl benzene)



(*b*) Dichloro styrene

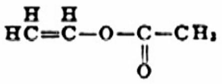


(*c*) Acrylonitrile (vinyl cyanide)



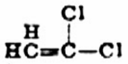
$$H\overset{H}{C}{=}\overset{H}{C}-CN$$

(*d*) Vinyl acetate



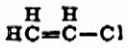
$$H\overset{H}{C}{=}\overset{H}{C}-O-\underset{\underset{O}{\parallel}}{C}-CH_3$$

(*e*) Vinylidene chloride



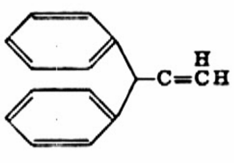
$$H\overset{H}{C}{=}\overset{\overset{Cl}{|}}{C}-Cl$$

(*f*) Vinyl chloride

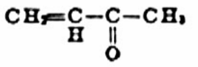


$$H\overset{H}{C}{=}\overset{H}{C}-Cl$$

(*g*) Diphenyl ethylene

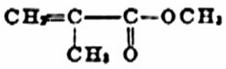


(*h*) Methyl vinyl ketone



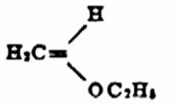
$$CH_2{=}\underset{H}{C}-\underset{\underset{O}{\parallel}}{C}-CH_3$$

(*i*) Methyl methacrylate



$$CH_2{=}\underset{CH_3}{C}-\underset{\underset{O}{\parallel}}{C}-OCH_3$$

(*j*) Vinyl esters, such as ethyl vinyl ether



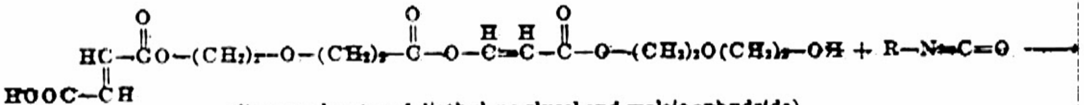
Where the laminating resin for the skin material **14** is a mixture of the unsaturated polyester and the monomeric mono-vinyl compound, there may be from 10 to 100 parts by weight of the monomeric compound for each 100 parts by weight of the unsaturated polyester resin.

The present invention, as illustrated in Figures 6 to 11 inclusive, being directed to the method of making laminated products is not directly concerned with the theory of the chemical action or mechanism attending the copolymerizing of the isocyanate containing molecules of the foaming core material **15** with the laminating resin. However, it appears that there are two ways in which this copolymerization takes place:

(1) By the reaction of the isocyanate containing molecules of the material comprising the core **16** with the hydroxyl (OH) and/or with the car-

boxyl (COOH) groups of the laminated resin. Thus:

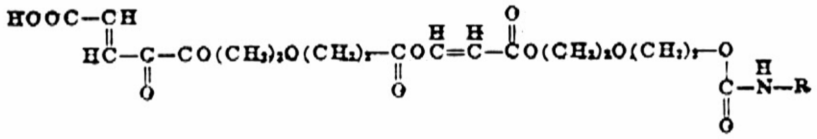
(a)



$$\mathrm{HOOC{-}CH{=}HC{-}\overset{O}{\overset{\|}{C}}O{-}(CH_2)_2{-}O{-}(CH_2)_2{-}\overset{O}{\overset{\|}{C}}{-}O{-}\overset{H}{C}{=}\overset{H}{C}{-}\overset{O}{\overset{\|}{C}}{-}O{-}(CH_2)_2O(CH_2)_2{-}OH + R{-}N{=}C{=}O \longrightarrow}$$

(linear polyester of diethylene glycol and maleic anhydride)

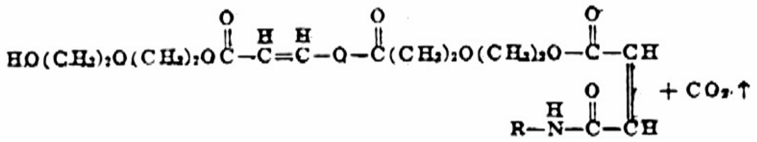
where R=structure attached to an isocyanate group



$$\mathrm{HOOC{-}CH{=}HC{-}\underset{O}{\underset{\|}{C}}{-}CO(CH_2)_2O(CH_2)_2{-}\underset{O}{\underset{\|}{C}}O\overset{H}{C}{=}\overset{H}{C}{-}\overset{O}{\overset{\|}{C}}O(CH_2)_2O(CH_2)_2{-}O{-}\underset{O}{\underset{\|}{C}}{-}\overset{H}{N}{-}R}$$

(additional reaction with terminal (OH) group resulting in formulation of a urethane)

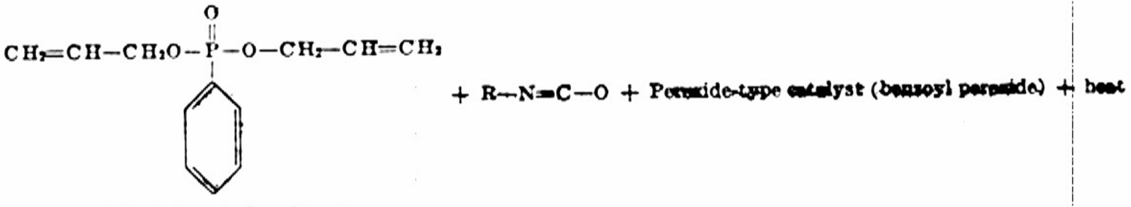
(b)



$$\mathrm{HO(CH_2)_2O(CH_2)_2O\overset{O}{\overset{\|}{C}}{-}\overset{H}{C}{=}\overset{H}{C}{-}O{-}\overset{O}{\overset{\|}{C}}(CH_2)_2O(CH_2)_2O{-}\overset{O}{\overset{\|}{C}}{-}CH{=}CH{-}\overset{O}{\overset{\|}{C}}{-}\overset{H}{N}{-}R + CO_2\uparrow}$$

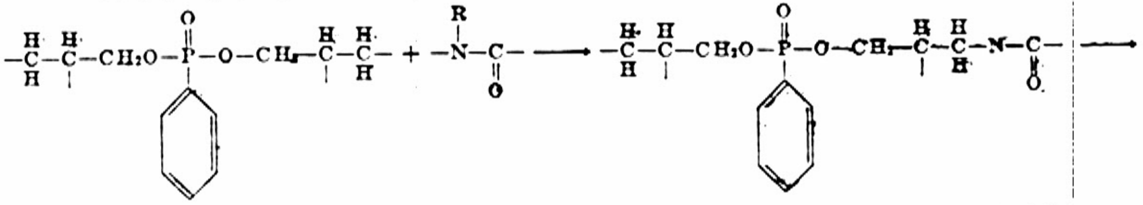
(reaction with terminal (COOH) group resulting in amide structure and liberating carbon dioxide)

(2) By the addition copolymerization of the activated isocyanate groups of the core material 15 with the activated vinyl groups of the laminating resin. Thus:



CH₂=CH—CH₂O—P—O—CH₂—CH=CH₂
+ R—N=C—O + Peroxide-type catalyst (benzoyl peroxide) + heat

diallyl phenyl phosphonate



It is to be understood that in the invention as practiced in Figures 6 to 11 inclusive, the laminating resin on, or incorporated in, the skin material 14 is unpolymerized and in a liquid or semi-liquid state when the reactant core producing material or mixture 15 is introduced into the mold cavity and allowed to react. The reaction of the material 15 is accompanied by the development of gas pressure which urges the skin materials 14 outwardly into conforming engagement with the walls of the mold and which brings the reactant foaming isocyanate containing mixture 15 into direct and intimate contact with the laminating resin so as to admix therewith. This admixing of the foaming isocyanate containing mixture 15 with the laminating resin is important in that it not only brings about the above described copolymerization of the two materials but also because it reduces the friction between the rising foaming mixture 15 and the skins 14. When the foaming core material 15 rises along the surface of a dry precured laminated skin the marginal cells of the core 16 are found to be elongated in the vertical direction due to the friction or resistance to vertical motion offered by the pre-cured skin. The resultant elongated cells of the core 16 are somewhat weaker than the uniform and substantially spherical cells of the internal areas of the core 16, leaving a weak interfacial zone. However, when the skin laminating resin is uncured at the time the core material 15 is reacted in the mold, this elongation of the outermost cells of the core 16 is eliminated or at least reduced and because the above described interfacial zone contains the co-polymer of the core material and the laminating resin, the interfacial zone is materially strengthened instead of being weakened.

The reaction of the alkyd resin-isocyanate mixture 15 is also accompanied by heat and this exothermic heat cures or polymerizes the laminating resin. Thus the laminating resin is polymerized and initially cured simultaneously with the core 16, making for a more uniform and stronger product. As in the previously described form of the invention the mold 20—22 may be maintained at a temperature of about 120° F. during the foaming reaction.

Following the pouring and reacting of the core 16 the product is preferably given a post-cure at from 125° F. to 225° F. for from 10 to 20 hours. The finished product may be machined as required and it is usually preferred to cut or trim off the uneven upper portion where the core material has spilled over the top of the mold.

Laminated products or articles such as manufactured in accordance with the methods herein described form the subject of our copending application Serial Number 188,384 filed October 4, 1950.

It should be understood that the invention is not based upon or dependent upon the theories which we have expressed. Nor is the invention to be regarded as limited to the express procedure or materials set forth, these details being given only by way of illustration and to aid in clarifying the invention. We do not regard such specific details as essential to the invention except insofar as they are expressed by way of limitation in the following claims in which it is our intention to claim all novelty inherent in the invention as broadly as is permissible in view of the prior art.

We claim:

1. The method of making a laminated article comprising providing laminating material carrying a wet polymerizable unsaturated organic substance containing at least two groups per molecule as the reactive constituents, said groups being selected from the class consisting of vinyl groups and allyl groups, said substance being capable of copolymerizing with isocyanate molecules, and then bonding a cellular plastic layer with said material by contacting a reactant cellular plastic isocyanate-containing mixture with the wet organic substance-carrying material, and then allowing the mixture to react to form the cellular plastic layer and to copolymerize with said organic substance of said laminating material.

2. The method of making a laminated article comprising impregnating skin material with a wet polymerizable unsaturated organic material containing at least two groups per molecule as the reactive constituents, said groups being selected from the class consisting of vinyl groups and allyl groups, said material being capable of copolymerizing with isocyanate-containing compounds, supporting the impregnated skin material, and then providing a layer of cellular plastic material bonded to the skin material by contacting the wet impregnated skin material with a reactant isocyanate-containing resin mixture, and allowing said mixture to react to form a cellular plastic body while said polymerizable material and mixture copolymerize to constitute a diffusion zone between said skin and body containing molecules of said polymerizable material and said mixture.

3. The method of making a laminated article comprising impregnating fabric skin laminations with a wet polymerizable unsaturated organic material containing at least two groups per molecule as the reactive constituents, said groups being selected from the class consisting of vinyl groups and allyl groups, said material being capable of copolymerizing with isocyanate-containing compounds, arranging the skin laminations in spaced apart relation and then providing a cellular plastic layer between the skin laminations and at the same time curing said polymerizable material by introducing into the space between the skin laminations a reactant isocyanate-containing resin mixture while said resin remains wet, and then allowing the mixture to react to form the cellular layer, to copolymerize with said material in a diffusion zone between said layer and the skin laminations, and to cure said in the laminations.

4. The method of making a laminated article comprising impregnating skin laminations with a wet polymerizable unsaturated organic material containing at least two groups per molecule as the reactive constituents, said groups being selected from the class consisting of vinyl groups and allyl groups, said material being capable of copolymerizing with isocyanate-containing compounds, arranging the skin laminations in spaced apart relation by placing them on the walls of a mold, and then forming a cellular plastic layer between and bonded with the skin laminations by introducing into the space between the skin laminations a reactant isocyanate-containing resinous mixture while said polymerizable material remains wet, and allowing the mixture to react to form a cellular plastic layer, to copolymerize with said material in the interfacial zones of the layer and laminations, and to cure said material in the laminations.

5. The method of making a laminated article comprising impregnating fabric skin laminations with a wet polymerizable material comprising an unsaturated polyester which is the reaction product of a dihydric alcohol and an alpha unsaturated, alpha-beta dicarboxylic acid; and a monomeric compatible co-reactive compound containing groups selected from the class consisting of vinyl groups and allyl groups, said polymerizable material being capable of copolymerizing with isocyanate-containing compounds, arranging the wet skin laminations in spaced apart relation by engaging them on the walls of a mold, and then forming a cellular plastic core between and bonded with said laminations while simultaneously curing said polymerizable material by introducing a reactant alkyl resin-diisocyanate mixture into the space between said laminations while said polymerizable material remains wet, and then allowing the mixture to react to form the core, to copolymerize with said polymerizable material at the interfaces between the core and laminations, and to cure the polymerizable material in the laminations.

6. The method of making a laminated article comprising impregnating inorganic fabric skin laminations with a wet polymerizable material comprising an unsaturated polyester which is the reaction product of a dihydric alcohol and an alpha unsaturated, alpha-beta dicarboxylic acid; and a monomeric compatible co-reactive compound containing groups selected from the class consisting of vinyl groups and allyl groups, said polymerizable material being capable of copolymerizing with isocyanate-containing compounds, arranging the skin laminations in spaced apart relation by engaging them on the walls of a mold, forming a cellular plastic core between and bonded with said laminations while simultaneously curing said polymerizable material by introducing a reactant alkyd resin-diisocyanate mixture into the space between said laminations while said polymerizable material remains wet, allowing the mixture to react to form the core, to copolymerize with said said polymerizable material at the interfaces between the core and laminations, and to cure said polymerizable material in the laminations, and then post-curing the article at from 125° F. to 225° F. for from 10 to 20 hours.

7. The method of making a laminated article which comprises providing a porous fabric skin, impregnating the skin with a liquid polymerizable material comprising an unsaturated polyester which is the reaction product of a dihydric alcohol and an alpha unsaturated alpha-beta dicarboxylic acid, and a monomeric-compatible coreactive compound containing groups selected from the class consisting of vinyl groups and allyl groups, and then bonding a body of cellular plastic with the skin by contacting a mass of a reactant isocyanate-containing resinous mixture with the skin while said polymerizable material remains wet, and allowing said mixture to react to form the cellular plastic body, to copolymerize

with said polymerizable material in the interfacial zone between said skin and body and to cure the polymerizable material in the skin.

8. The method of making a laminated article which comprises providing a porous-material skin, impregnating the material of the skin with a liquid unsaturated polyester containing two or more vinyl groups per molecule, and then bonding a body of cellular plastic with the skin by contacting a mass of a reactant isocyanate-containing resin mixture with the skin while said unsaturated polyester remains in the liquid state, and then allowing said reactant mixture to react to form the cellular body, to copolymerize with said unsaturated polyester in the interfacial region between the skin and said body and to cure the polyester in the skin.

ELI SIMON.
FRANK W. THOMAS.
EDWARD H. BURKART.

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Number	Name	Date
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2,247,337	Raflovich	June 24, 1941
2,317,047	Foote	Apr. 20, 1943
2,358,369	Weaver	Sept. 19, 1944
2,394,122	Urnston	Feb. 5, 1946
2,394,327	Niessen	Feb. 5, 1946
2,398,388	Norton	Apr. 16, 1946
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2,456,093	Swedlow	Dec. 14, 1948

FOREIGN PATENTS

Number	Country	Date
392,952	Great Britain	May 22, 1932

EXCERPTS FROM DEFENDANT'S EXHIBIT NO. 1 C

In re application of
Christopher L. Wilson et al.) Appeal No. 324 50
)
Ser. No. 441,984) Before the Board of
Filed July 8, 1954) Appeals
For FOAMED POLYESTER RESIN)
LAMINATED PRODUCTS)

Kenyon & Kenyon For Appellant

Examiner's Answer

This is an appeal from the final rejection of claims 4, 5, 17, 18, 21, 22 and 23. Claims 19, 20 and 26 have been found allowable. Claims 1 - 3, 6 - 16, 24 and 25 have been cancelled by applicants and are not on appeal.

A correct copy of claims 4, 5, 17 and 22 appears on pages 4 - 6 of applicants' appeal brief. Claims 6, 24 and 25 (the latter two appear on page 8 of the appeal brief) have been cancelled by applicants following the filing of the appeal brief and are consequently withdrawn from further consideration. Claims 18, 21 and 23 have been amended by applicants since the appeal brief was filed and now read as follows:

* * * * *

Claim 21

"A method of making a molded laminated product comprising lining the inner surface of a mold with a film consisting entirely of a resin selected from the group consisting of polyvinyl chloride resin and curable polyester resin, partially filling the mold with a reaction mixture of (1) polyester resin derived from a polycarboxylic acid and a polyhydric alcohol, (2) an organic diisocyanate, (3) water, and (4) a tertiary amine catalyst, allowing said mixture to react to form a resilient foamed body within said mold and allowing said film to cure and bond to said resilient foamed body."

* * * * *

The References Of Record Relied Upon Are:

* * * * *

Simon et al	2,639,252	May 19, 1953

* * * * *

The Alleged Invention

The alleged invention relates to the production of laminated products, wherein at least one of the laminae is a foamed polyester-isocyanate resin, commonly referred to as a "polyurethane foam". Two such laminae may be adhesively joined by means of a film of curable polyester resin adhesive which has been modified with diisocyanate. The adhesive film is cured in situ in adhesive relation to said laminae. This results in a unitary structure. It is also claimed that the curable polyester-isocyanate adhesive may be used to bond a layer of polyurethane foam to a layer of "another material". The bond is made permanent by curing the adhesive in situ. The claimed embodiment involves a method which comprises lining the inner surface of a mold with a film of a resin selected from the group consisting of polyvinyl chloride resin and curable polyester resin, partially filling the mold with a reactive foamable mixture capable of reacting and expanding to form a foamed body within said mold and allowing said film to cure and bond to the foamed body.

The References

* * * * *

Simon 2,639,252

The Simon patent discloses the production of diisocyanate modified polyester resin foam in a mold which is lined with a fibrous material such as glass impregnated with a resin which may copolymerize with the foam to secure the foam material to the resinous matter impregnating the fabric.

The Final Rejection and Applicants' Arguments

* * * * *

Claim 21 was finally rejected as fully met by Simon, with particular reference to Figure 3 thereof. Simon lines a mold with a glass-fabric structure impregnated with curable polyester resin, places a foamable polyester isocyanate mixture into the mold and thus obtaines a unitary structure. Applicants, on the other hand leave out the glass fabric. Whether glass fabric is present in the skin or not has nothing to do with the method, and this is a method claim. Likewise, it is immaterial, for the purpose of a method claim whether the foam produced by Simon is rigid or flexible, especially in view of the indefiniteness of the dividing line between "rigid and flexible". Claim 21, as amended, also recites the alternative use of a skin of polyvinyl chloride resin instead of a curable polyester resin. However, on page 3 of paper No. 28 applicants concede that the use of a skin of polyvinyl chloride resin instead of polyester resin does not enlarge the issue of patentability over Simon. Applicants further point out, on the same page, that vinyl chloride is one of the materials specifically mentioned by Simon as capable of being used in the skin film of Simon. (Column 14, lines 56 - 58).

For the reasons given above, the final rejection of claims 4, 5, 17, 18, 21, 22 and 23 is considered proper and should be affirmed.

Respectfully submitted,

/s/ C. F. Krafft
Examiner, Division 67

/s/ P. I.
P. Isakov/evg

DEFENDANT'S EXHIBIT NO. 1 D

In re application of Christopher L. Wilson et al.	)	Appeal No. 324 50
Ser. No. 441,984 Filed July 8, 1954 For FOAMED POLYESTER RESIN LAMINATED PRODUCTS	)	Before the Board of Appeals

---

Kenyon & Kenyon For Appellants

Supplemental Examiner's Answer

Appellants amendments filed November 16, 1960 and January 17, 1961, have been entered in view of the fact that they place the case in better condition for appeal by the cancellation of five claims on appeal, and the subsequent cancellation of claims 18 and 21 and the substitution therefor of claims 27 and 28. The case is now in better condition for purposes of appeal, in that the issues are reduced in number by the net cancellation of five claims. However, claims 27 and 28 are considered no more patentable than cancelled claims 18 and 21 which they replace. All the grounds of rejection applied against claims 18 and 21 in the Examiner's Answer of June 7, 1960 remain applicable to the new claims 27 and 28 respectively. No further elaboration seems necessary since, as appellants state in Paper No. 36, no new issues are raised by the two latest amendments.

In view of the above remarks, claims 27 and 28 remain finally rejected and on appeal. Claims 19, 20, and 26 remain allowed. Claims 1 - 18 and 21 - 25 have been cancelled by appellants and are not before the Board.

/s/ C. F. Krafft
Examiner

P. Isakov/evg

/s/ P.I.

EXCERPTS FROM DEFENDANT'S EXHIBIT NO. 1 E

Appeal No. 324-50

Hearing:
May 23, 1961

IN THE UNITED STATES PATENT OFFICE

BEFORE THE BOARD OF APPEALS

Ex parte Christopher L. Wilson
and Oscar Shuffman

- - -

Application for Patent filed July 8, 1954, Serial No. 441,984.
Foamed Polyester Resin Laminated Products.

Kenyon & Kenyon For Appellants.

Before Duncombe and Magil, Examiners-in-Chief, and Marmelstein, Acting Examiner-in-Chief.

Marmelstein, Acting Examiner-in-Chief.

This is an appeal from the refusal of the Examiner to allow claims 27 and 28. Claims 19, 20 and 26 have been allowed.

Claims 27 and 28 read as follows:

> 27. A laminated material comprising a layer of resilient foamed polyester resin consisting of the reaction product of (1) a polyester resin derived from a dibasic acid selected from the group consisting of adipic, succinic and azelaic acids and a glycol selected from the group consisting of di-, tri-, and polyethylene glycols, (2) toluene diisocyanate, (3) water, and (4) a tertiary amine catalyst; another layer of material, and diisocyanate modified polyester resin of said layer fused in situ bonding opposed areas of said layers together at which said layer is compressed.

28. A method of making a molded laminated product comprising lining the inner surface of a mold with a film consisting essentially entirely of a resin selected from the group consisting of polyvinyl chloride resin and curable polyester resin, partially filling the mold with a reaction mixture of (1) a polyester resin derived from a polycarboxylic acid and a polyhydric alcohol, (2) an organic diisocyanate, (3) water, and (4) a tertiary amine catalyst, allowing said mixture to react to form a resilient foamed body within said mold and allowing said foamed body to cure and to bond to said film.

The references relied upon are.

Untiedt	2,434,527	Jan. 13, 1948
Simon et al.	2,639,252	May 19, 1953
Schwartz	2,713,884	July 26, 1955

The claimed invention is sufficiently described in the copied claims.

The references are briefly described by the Examiner on pages 3 and 4 of his answer of June 7, 1960.

* * * * *

Claim 28 has been held by the Examiner as unpatentable over the Simon et al. patent with particular reference to Figure 3 thereof. The Examiner states that Simon et al. line a mold with a glass fabric structure impregnated with curable polyester resin and place a foamable polyester-isocyanate mixture into the mold and thus obtain a unitary structure whereas appellants leave out the glass fabric. Since this claim is a method claim, he considers it to be immaterial that a glass fabric is present in the skin.

Claim 28 specifies that the lining of the inner surface of the mold may be a film consisting essentially entirely of a resin selected from the group consisting of polyvinyl chloride resin and curable polyester resin. These resins are disclosed in the reference for impregnating the glass fabric or other material of the lining.

Appellants point out that claim 28 calls for a mold lining of a film which consists essentially entirely of a curable polyester resin and it recites allowing the mixture to react to form a resilient foamed body within the mold.

We will sustain the rejection of claim 28 as unpatentable over Simon et al. We agree with the Examiner that this patent discloses the steps of the method claimed and we do not think that the differences in the composition of the lining and the state of the foamed material are patentable differences. The patent discloses that the resins used in the lining may be of the polyester type or a mixture thereof with vinyl chloride (column 16 of the patent) so that there is no difference in the resin of the lining. The lining may be considered as composed of the resin containing fibers, but as we have indicated above, we do not consider the difference in composition of the lining to be a patentable distinction since we are concerned with the steps of the method that is claimed. As to the limitation that the foam is resilient, this is a limitation on the product of the step of allowing the mixture to react. It is not a limitation on the step of the process. Moreover, "resilient" is a relative term and for this reason, additionally does not distinguish over the reference. In any event, the differences are ones of degree and not of kind. We have considered all of appellants' arguments but do not consider that the Examiner has erred in rejecting claim 28.

The decision of the Examiner is affirmed with respect to claim 28 and is reversed with respect to claim 27 with a recommendation of allowance of claim 27 upon amendment as recommended under the provisions of Rule 196(c).

AFFIRMED-IN-PART

/s/ C. S. Duncombe)
Examiner-in-Chief)
)
/s/ H. Magil) BOARD
Examiner-in-Chief) OF
)
/s/ N. Marmelstein) APPEALS
Examiner-in-Chief)
(Acting))

Kenyon & Kenyon
165 Broadway
New York 6, N.Y.

Aug. 21, 1956 H. VAN SWAAY **2,759,475**

FORM FOR MAKING SPLINTS AND THE LIKE

Filed Sept. 30, 1953

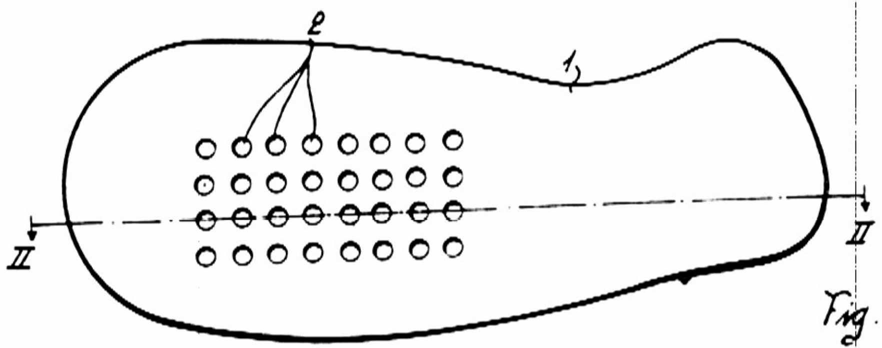

Fig. 1

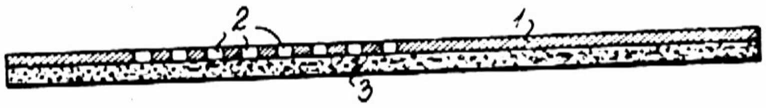

Fig. 2

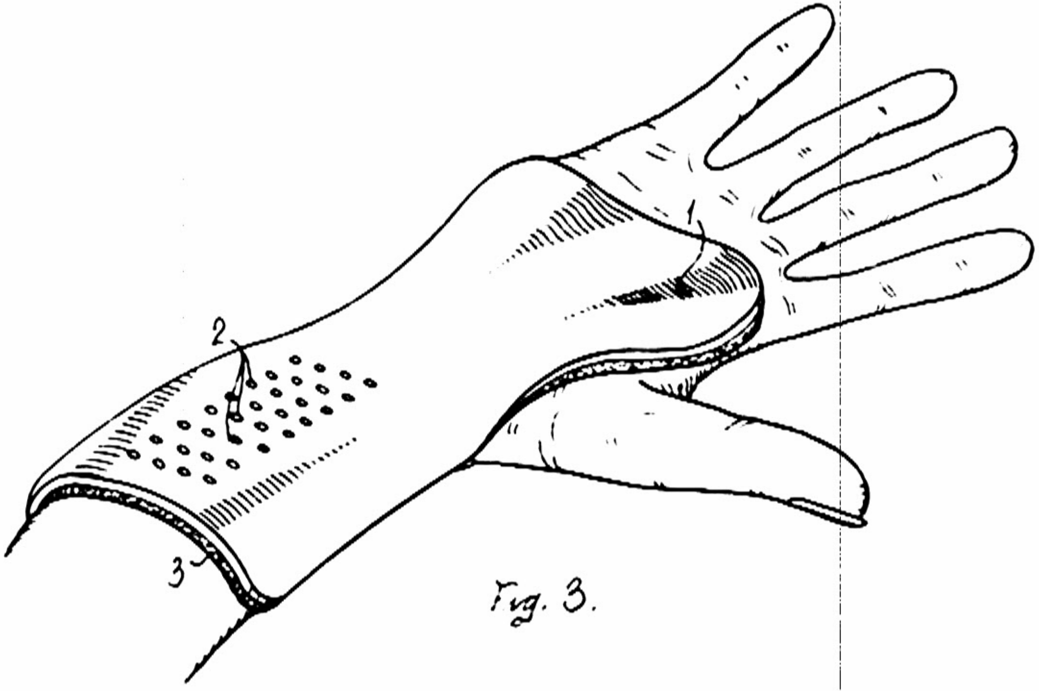

Fig. 3.

INVENTOR
HENRI VAN SWAAY
BY Hammond & Littell
ATTORNEYS

United States Patent Office

2,759,475

Patented Aug. 21, 1956

2,759,475

FORM FOR MAKING SPLINTS AND THE LIKE

Henri Van Swaay, The Hague, Netherlands

Application September 30, 1953, Serial No. 383,239

Claims priority, application Netherlands April 17, 1953

8 Claims. (Cl. 128—90)

The invention relates to a form or a blank for making splints and other orthopedic or surgical supports. The devices concerned are partly of the type used in fixation in the case of treatment of fractures, but mainly splints for forcing joints of the human body into a certain desired position, as is necessary when these joints are affected by certain rheumatic or other complaints.

The splints and supports in question preferably should be of light material and readily applied, for example with the aid of bandages, slings or other means and also removed again. Plaster of Paris is no doubt a suitable material for this, but has the drawback of being heavy and voluminous, and easily crushed, so that the splinting has to be repeated again and again, which is unpleasant for the patient. Moreover it is difficult to clean.

It is better to make the splints or supports from sheet material. When they are to be made by beating and bending from metal or other sheet material, this calls for great manual dexterity, so that the medical practitioner always has to be assisted by a specialist, which makes the application of the splints and supports difficult and considerably raises their cost.

For this reason measures have been taken to make the splints from thermoplastic material. When a cast in plaster of Paris has then been made of the member or joint concerned, the medical practitioner himself will have little difficulty in making the splint, or an assistant will usually make it by starting from a preformed flat piece of thermoplastic material, heating this to a temperature at which it becomes sufficiently plastic, and then moulding this form on the plaster cast. It is also easy to make any subsequent corrections in the shape.

This invention aims at producing a further improvement of this process, and specifically aims at making the use of the plaster cast superfluous, which implies a considerable simplification of the process.

According to the invention the starting material is also a blank of flat or at most slightly curved sheet material, which is thermoplastic and can be moulded into the desired splint or the like by plastic three-dimensional transformation. According to the invention the sheet material consists of one or more—possibly perforated—layers of a solid thermoplastic material and a layer of foam-, sponge- or cell-plastics firmly fixed thereon, at least on the side coming into contact with the part of the body to be splinted, which foam plastics retains its foam character at the temperature necessary for the plastic deformation of the solid layer and can be likewise deformed, and whose heat conductivity and heat capacity is so slight that it acts as an insulator and, when brought into contact at this temperature with the human skin, the latter is not appreciably injured by it.

The blanks in question are therefore preformed pieces, which can be marketed in series and are suitable for different joints, parts, and members of the human body, and which in medical practice itself need only be heated and can then be moulded in the right shape on the human body itself, without any other treatment.

With reference to the drawing this will be explained more in detail.

Fig. 1 is a small scale illustration of a flat blank suitable for splinting the wrist of a man's right hand.

Fig. 2 is a cross-section on the line II—II in Fig. 1.

Fig. 3 is a perspective illustration of the result to be attained by the medical practitioner with the use of the form according to Figs. 1 and 2.

The blank consists of a layer 1 of solid thermoplastic material, for example of the type of the transparent Plexiglas (e. g. methyl methacrylate). Non-transparent materials, such as polyethylene, may naturally also be used. This layer 1 is provided with plentiful perforations 2, which promote evaporation of the perspiration moisture produced underneath the splint and moreover reduces the weight of the splint to be subsequently moulded from it.

The entire surface of the layer 1 is covered with a layer of foam plastics 3 (e. g. polyurethane foam), which is thoroughly fixed on to it, in general by glueing. This foam plastics should at any rate be pliable and soft, and resistant to the plasticizing temperature (as a rule not higher than about 170° C.) of the layer 1, without losing its distinctive character of foam plastics, its insulating capacity, and its elasticity.

When the medical practitioner wishes to splint the wrist of a man's right hand, he need only heat the blank according to Figs. 1 and 2 in a suitable manner to the desired plasticizing temperature. Upon this he can apply the perfectly soft blank immediately upon the wrist to be splinted, and attach it with a few bandages or the like. The foam plastics 3 can be so chosen that it insulates the heat absorbed by the blank in such a way from the human skin that the latter is not injured by the application of the hot blank, at most only becomes slightly red.

Very shortly after the application the blank has cooled again, has assumed the desired shape and the desired rigidity, and can serve, in the manner illustrated in Fig. 3, as a splint, fixed by means of a bandage, sling or the like. In some cases the splint may have such a shape that any fixation is superfluous, for example when the splint is "circular" (surrounding the joint).

I claim:

1. A blank for making splints and other orthopedic supports, consisting of thermoplastic sheet material which can be softened and molded into the desired splint or the like at temperatures from about 57° C. to 170° C. by plastic three-dimensional deformation, said thermoplastic sheet material consisting of at least one layer of a solid thermoplastic material and a layer of foam plastic firmly fixed thereon, on the side coming into contact with the part of the body to be splinted, said foam plastic retaining its foam character at the temperature necessary for the plastic deformation of the said thermoplastic sheet material and being likewise deformable, the heat conductivity and heat capacity of said foam plastic being such that, when brought into contact with the human skin at the molding temperature of said thermoplastic material, the said skin is not appreciably injured by the heat of said heated thermoplastic material.

2. A blank as claimed in claim 1, in which at least one layer of the solid thermoplastic material is perforated.

3. A blank for making splints and the like consisting of solid thermoplastic sheet material which can be softened and molded into the desired splint at temperatures between 57° C. and 170° C., said thermoplastic sheet having a layer of foam plastic fixed thereto which retains its foam character at the temperature at which the sheet can be molded, said foam plastic layer having a heat conductivity and heat capacity such that when brought into contact wiith the human skin when the sheet of

thermosplastic material is at molding temperature, said foam plastic layer will not burn the skin.

4. A blank for making splints and the like consisting of a plurality of layers of solid thermoplastic sheet material which can be softened and molded into the desired splint, said thermoplastic sheet having a layer of foam plastic fixed thereto which retains its foam character at the temperature at which the sheet can be molded, said foam plastic layer having a heat conductivity and heat capacity such that when brought into contact with the human skin when the sheet of thermoplastic material is at molding temperature, the heated splint blank will not burn the skin.

5. A blank as claimed in claim 4 in which at least one of said layers of thermoplastic sheet material is perforated.

6. As an article of manufacture a thermoplastic moldable splint comprising, a sheet of thermoplastic moldable material and a covering of heat insulating foam plastic fixed thereto said foam plastic insulating the human skin from the heat of said thermoplastic material at the molding temperature for said thermoplastic material.

7. As an article of manufacture a thermoplastic moldable splint made of thermoplastic moldable material having an insulating foam layer attached thereto, of a thickness sufficient to protect the human skin against injury when the thermoplastic moldable material is heated to

moldable temperature and applied and shaped to a portion of the human body.

8. The method of forming a molded splint on a portion of the human body which comprises providing a thermoplastic moldable splint blank having an insulating foam layer attached thereto, heating the splint blank to molding temperature between 57° C. and 170° C. and applying the heated blank to the portion of the human body to be splinted, with the insulating foam layer next to the skin, shaping the heated blank to the portion of the body to the splinted, insulating the portion of the body to be splinted from the heat of said blank by said insulating foam layer and allowing the blank to cool in its shaped form while in contact with the portion of the body to be splinted.

References Cited in the file of this patent

UNITED STATES PATENTS

2,303,759	Pippin	Dec. 1, 1942

FOREIGN PATENTS

436,109	Great Britain	Oct. 4, 1935

OTHER REFERENCES

Modern Plastics for November 1938, pg. 34. (Copy in Scientific Library.)

APPLICATION OF CHRISTOPHER L. WILSON AND ROBERT LIEBERMAN

Translation of German Patent No. 860,109, Class 39 b, Group 22/04, to Farbenfabriken Bayer, of Germany (August Hochtlen and Walter Droste, inventors); patented in Germany from 20 April 1941; patent application announced 24 April 1952; granting of patent announced 30 October 1952; published 18 December 1952.

SYNTHETIC SPONGES.

It is known that synthetic sponges are produced from elastic materials such as viscose or rubber, their high porosity being obtained by foaming especially with the aid of gas-developing materials, the so-called blowing (inflating, sponging) agents.

In accord with the invention, reaction products of diisocyanates with compounds containing at least two exchangeable hydrogen atoms in the molecule are used as carrier substances for such synthetic sponges. First of all, compounds containing hydroxyl groups are considered for this purpose, and in such case again preferably those compounds having already a high molecular weight. As examples for this purpose, mention may be made of esters manufactured from an excess of polyvalent alcohols, such as glycerin, glycol, pentaerythrite, trimethylolpropane and polyoxyparaffin, and small quantities of polyvalent acids, such as adipic acid, phthalic acid, thiodiglycolic acid, thiodipropionic acid, dihydracrylic acid and butlylenebishydracrylic acid. Still other components, such as higher fatty acids, can of course be condensed into such esters. The diisocyanates can belong to the aliphatic as well as to the aromatic series. Compounds which react under equal working conditions as diisocyanates can also be used in the place of diisocyanates. Bisphenylurethanes are examples of such compounds. Furthermore, it is of course possible to work by adding softeners, fillers and similar materials.

The air or gas bubbles can be produced in the usual manner, for example by reacting the named compounds in the presence of a blowing agent, for instance an ammonium salt such as ammonium carbonate. Furthermore, it is possible to work with the aid of solvents that can be readily vaporized but do not themselves react with diisocyanates, and whose vapor pressure can be increased in a suitable manner, for example by means of heat or vacuum. Gases, for example nitrogen, can also be pressed into the fluid mass and then the further treatment performed in vacuum. Finally, the starting materials can be so selected that they themselves form gaseous separation products during the reaction. Such is the case, for instance, where the compounds reacting with diisocyanates contain free carboxyl groups, since the latter react with isocyanate groups so as to yield amides with the separation of carbonic acid (carbon dioxide), or where such compounds are selected that split up at higher temperatures into diisocyanates and readily vaporizable components.

The reaction of the reactive components is usually promoted by applying higher temperatures. Furthermore, they can be influenced by catalysts such as iron (ferric) chloride, tin tetrachloride, triethylamine, pyridine or trichloroacetic acid. It is recommended that care be taken that the mixture of the starting materials is still in a flowing state under the conditions of reaction. This can be effected, either by the selection of the starting materials or by additives such as softeners or fillers.

The highly porous sponges synthetized in the manner described are distinguished by a firm coherence and very high elasticity with low bulk density.

Example 1

A mixture of 10 parts by weight of a condensation product of 4 mols adipic acid with 5 mols trimethylolpropane having an acid number of 45 and 6.5 parts by weight of hexamethylenediisocyanate is well stirred for about 30 minutes at a temperature of 130°. A very elastic sponge having very fine pores is obtained.

Example 2

10 parts by weight of a condensation product of 4 mols adipic acid with 5 mols trimethylolpropane having and adipic acid with 5 mols trimethylolpropane having an diisocyanate and 0.05 parts by weight of anhydrous iron (ferric) chloride are well mixed by stirring, and after heating for 5 to 10 minutes at 130^{o} yield a finely porous sponge.

Example 3

9 parts by weight of a condensation product of 3 mols adipic acid with 4 mols trimethylolpropane, 6 parts by weight of toluylenediisocyanate, 2.3 parts by weight of methylene chloride, 2 parts by weight of dibutyl ester of phthalic acid are treated as in example 1, and an elastic sponge is obtained.

[Filed Mar. 8, 1963]

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

HUDSON FOAM PLASTICS CORPORATION,)
Plaintiff,)
)
vs.) CIVIL ACTION
) No. 2763-61
DAVID L. LADD,)
COMMISSIONER OF PATENTS,)
Defendant.)

OPINION

This is an action brought under Title 35 U.S.C. Sec. 145 wherein plaintiff as assignee of an application for patent by Christopher L. Wilson and Oscar Shuffman, entitled "Foamed Polyester Resin Laminated Products", Serial No. 441,984, filed July 8, 1954, seeks to have the Court authorize the issuance to it of a patent containing claim 28 of that application. Four claims have been allowed by the tribunals of the Patent

Office, and therefore, it is obvious that there is patentable subject matter found in certain disclosures and claims.

The specification of the application herein involved discloses several different specifications with respect to foamed diisocyanate modified polyester resins. Claim 28 is claimed to be one of these species and reads as follows:

> "28. A method of making a molded laminated product comprising lining the inner surface of a mold with a film consisting essentially entirely of a resin selected from the group consisting of polyvinyl chloride resin and curable polyester resin, partially filling the mold with a reaction mixture of (1) a polyester resin derived from a polycarboxylic acid and a polyhydric alcohol, (2) an organic diisocyanate, (3) water, and (4) a tertiary amine catalyst; allowing said mixture to react to form a resilient foamed body within said mold and allowing said foamed body to cure and to bond to said film."

The references relied upon in the decision of the Board of Appeals are:

Untiedt	2,434,527	Jan. 13, 1948
Simon et al.	2,639,252	May 19, 1953
Schwartz	2,713,884	July 26, 1955

In view of the conclusion reached by the Court, it is only necessary to discuss the Simon et al. reference. That patent discloses a method for the production of a molded laminated diisocyanate modified polyester foam product, and comprises four steps in the method.

The materials entering into the mold lining or skin in that patent depend upon intended use. Three general types of mold linings or skin appear in the specifications. In one the skin lining is prelaminated and preformed containing polymerized cured resins and securely bonds with the foamed or cellular core. The other types show soft fabric penetrated and embedded in the foamed product due to polyurethane reaction which results in an effective lamination and bonding, while the third type provides for layers of fibre glass fabric, matting or felt saturated or partially saturated with laminating resin. The resinous material copolymerizes in the surface of the foamed polyurethane as the latter is formed.

The method steps of the involved claim do not differ from those of the Simon et al. patent except in the materials used, but those are analogous to the materials of the old method. It appears that the materials of plaintiff here are analogous to the Simon et al. patent.

The Court agrees with the decision of the Examiner and Board of Appeals that the patent discloses the steps of the claimed method, and it is immaterial whether the product produced by the patent is rigid or flexible, or whether or not glass fabric or any other fabric is present in the skin.

It is deemed unnecessary by the Court to state at length that the materials in claim 28 were known to the art at the time the application involved herein was filed. Witnesses for the plaintiff on cross-examination have testified that the use of tertiary amine catalysts in the production of polyurethanes were known prior to 1952, and based that information on what had been read and heard.

For the reason that the evidence shows that the process set out in claim 28 is old, and the only difference is that it recites analogous materials which are clearly shown to have been known to the art when the application was filed, it is clear that the use of such materials in the method of Simon et al. would be obvious to one skilled in the art.

For the reasons hereinbefore set out, the Court finds for the defendant, and makes the following conclusions of law:

1. An old and known process does not become patentable merely because different but analogous materials are used therein.
2. The method defined in claim 28 set forth in paragraph 7 of the complaint is unpatentable.
3. Plaintiff is not entitled to a patent containing claim 28, set forth in paragraph 7 of the complaint.
4. The complaint should be dismissed.

/s/ Joseph R. Jackson
JUDGE

[Filed March 8, 1963]

ORDER

This action came on for hearing on February 12, 1963. Upon consideration thereof, as well as the briefs which the Court accorded counsel for plaintiff and defendant an opportunity to file, it is this 8th day of March, 1963,

ORDERED that judgment be, and the same is hereby entered in favor of defendant, and that the Complaint be, and it is hereby, dismissed with costs to be assessed against plaintiff.

IT IS FURTHER ORDERED that the Opinion filed herein serve as findings of fact and conclusions of law.

/s/ Joseph R. Jackson
JUDGE

[Filed March 13, 1963]

ORDER

Upon consideration of the Court's motion sua sponte to vacate judgment entered herein on March 8, 1963, and it appearing to the Court that the Court considered in rendering its opinion a document entitled "Trial Brief for Plaintiff" but did not consider "Plaintiff's Brief After Trial" because the latter document had not been filed herein until March 11, 1963, and it further appearing to the Court that counsel for plaintiff intended that the document entitled "Plaintiff's Brief After Trial" be considered by the Court as the Plaintiff's Post Trial Brief, it is this 13th day of March, 1963,

ORDERED, that the judgment entered herein on March 8, 1963 be, and the same is hereby vacated.

/s/ Joseph R. Jackson
JUDGE

[Filed March 27, 1963]

ORDER

This action came on for hearing on February 12, 1963. Upon consideration thereof, as well as the brief of defendant, "Trial Brief for Plaintiff", "Plaintiff's Brief After Trial", filed March 11, 1963, and "Plaintiff's Reply to the Brief for Defendant", filed March 19, 1963, it is this 27th day of March, 1963,

ORDERED that judgment be, and the same is hereby entered in favor of defendant, and the Complaint be, and it is hereby dismissed with costs to be assessed against plaintiff.

IT IS FURTHER ORDERED that the opinion filed herein serve as findings of fact and conclusions of law.

/s/ Joseph R. Jackson
JUDGE

[Filed May 27, 1963]

NOTICE OF APPEAL

Notice is hereby given that Hudson Foam Plastics Corporation, Plaintiff above named, hereby appeals to the United States Court of Appeals for the District of Columbia from the Order of Judge Joseph R. Jackson, dated March 27, 1963, dismissing the Complaint in the cause herein and assessing costs against Plaintiff, entered in this action on March 27, 1963.

FISHER, CHRISTEN, SABOL &
CALDWELL

By /s/ Martin T. Fisher

* * *

Of Counsel:

MORGAN, FINNEGAN, DURHAM
& PINE

* * *

BRIEF FOR APPELLANT

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 18,074

HUDSON FOAM PLASTICS CORPORATION,

Appellant,

v.

DAVID L. LADD,
Commissioner of Patents,

Appellee.

APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

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On the Brief

United States Court of Appeals
for the District of Columbia Circuit

FILED OCT 18 1963

Nathan J. Paulson
CLERK

QUESTIONS PRESENTED

1. In a trial under 35 U.S.C. § 145 where the Trial Court had before it expert testimony and exhibits which in their totality established (a) that the steps of the sole method claim on appeal were not the same as the steps of the sole reference on which the Patent Office rejected the claim, (b) that the steps of said method claim were not obvious from said reference, (c) that the materials on which the steps of the method claim were practiced were not analogous to the materials employed in carrying out the steps of the reference, and (d) that the product produced by the method of the claim was new and different from that produced by the reference, was not the normal presumption of correctness of the Patent Office decision overcome and should not the Trial Court have held that the appellant was entitled to receive a patent.

2. Did the Trial Court err in failing to hold that the Patent Office made a mistake in finding appellant's admittedly new process unpatentable over the only reference which showed a process for the production of a different article and carried out with materials different from those which the Patent Office held to be analogous and which materials were in fact not disclosed for the purpose in the reference and in the light of the evidence at the trial that such materials were in fact not analogous.

3. Should not (a) the shifts in grounds of rejection by the Board of Appeals and by the Solicitor before the District Court, and (b) the introduction by the Solicitor of new prior art at the trial of which no advance notice had been given, have destroyed the presumption of correctness of the Patent Office decision, and should not the District Judge's apparent reliance upon this presumption lead this Court to attach no presumption of correctness to the District Court's decision.

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United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 18,074

HUDSON FOAM PLASTICS CORPORATION,

Appellant,

v.

DAVID L. LADD,
Commissioner of Patents,

Appellee.

APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

BRIEF FOR APPELLANT

JURISDICTIONAL STATEMENT

This action was brought in the United States District Court for the District of Columbia against the Commissioner of Patents, David L. Ladd, under the provisions of 35 U.S.C. § 145* seeking an adjudication that appellant is entitled to receive a patent on the invention of

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* Title 35 of the United States Code was enacted into law by Act July 19, 1952, c. 950, § 1, 66 Stat. 792. Sections of Title 35 are referred to herein as "35 U.S.C. § ___".

Christopher L. Wilson and Oscar Shuffman, as specified in claim 28, which claim was denied to said inventors in a decision of the Patent Office Board of Appeals, and to authorize the Commissioner of Patents to issue the patent sought by appellant.

Appellate jurisdiction lies under Title 28, United States Code, §§ 1291, 1294(1).

The present appeal is taken from the Order of the United States District Court for the District of Columbia dated and entered March 27, 1963 dismissing the Complaint in this action and assessing costs against appellant.

Jurisdiction is pleaded in paragraph 1 of the Complaint (JA 2) and admitted in paragraph 1,2 of the Answer (JA 5).

STATEMENT OF THE CASE

Appellant, Hudson Foam Plastics Corporation, is the assignee of an application for patent on "Foamed Polyester Resin Laminated Products" filed by Christopher L. Wilson and Oscar Shuffman on July 8, 1954,* serial number 441,984. The application wove a protracted and tortuous path through the Patent Office with an exchange of many communications between the Patent Office and the inventors' representatives** (See PX 1, page 200, which is an index of the contents of the file of the aforesaid application).

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* A filing date of September 8, 1954 was alleged in paragraph 4 of the Complaint (JA 3) but this error was corrected by amendment to the Complaint consented to by appellee during the course of the trial (JA 10).

** Plaintiff's trial exhibits will be referred to as "PX" followed by the exhibit number. Defendant's trial exhibits will be referred to as "DX" followed by the exhibit number. If the exhibit is a document of more than one page, the page (s) of the Joint Appendix relied upon will be given. As to PX 1, the page (s) of the exhibit will be given only where they are not reproduced in the Joint Appendix.

Claim 28 of the application is the only claim involved in the present suit. It derives from original claim 13 (JA 71) presented with the application as filed. This claim was cancelled during the prosecution and the substance thereof was presented in a new claim 21 (JA 97). Claim 21 was finally rejected by the Examiner (JA 97). Appeal was taken to the Patent Office Board of Appeals from such final rejection (PX 1, page 95). Before the appeal was heard claim 21 was rewritten as claim 28 and in this rewritten form again presented to the Examiner who adhered to his final rejection (JA 100). The hearing by the Board of Appeals was from the final rejection of claim 28 which final rejection the Board of Appeals affirmed (JA 101).

The present status of the application is that four claims have been allowed, three by the Examiner and one by the Board of Appeals (JA 101, 103). These allowed claims, however, are directed to phases of the invention not covered by claim 28 which claim is of the utmost importance for proper protection of the invention.

The Examiner's final rejection of claim 21 and subsequently of claim 28 (JA 97, 100) was based on a single reference, to wit, U.S.L.P. No. 2,639,252 to Simon et al, hereinafter referred to as "Simon".

The Board of Appeals affirmed the Examiner's rejection of claim 28 on Simon (JA 103).

The patent application relates generally to the production of articles from foamed polyester polyurethane resins. Claim 28 relates particularly to a process whereby such articles as soft, resilient seat cushions, arm rests and the like, comprising a resilient foam body and a flexible outer skin cover to which the body is directly bonded without an intermediate adhesive, can be produced entirely within a mold.

A short description of the chemistry involved will be helpful. To aid the Court in following the same, definitions of the chemical terms used will be found in PX 7 (JA 77).

The foamed polyester polyurethane resin is formed by reacting three chemicals in the presence of a catalyst. The three chemicals are a polyester resin, an organic diisocyanate and water. The resin and diisocyanate react to form a polyurethane resin (JA 29, 73, col. 1, lines 57-72). Excess diisocyanate is present which reacts with the water to generate carbon dioxide (JA 74, col. 3, lines 7-15 and 42-51) which forms bubbles at the same time that the polyurethane resin starts to solidify. The bubbles are entrapped in the resin to form a multiplicity of cells. A particular type of polyester is selected so that the polyurethane resin produced is resilient and the foamed polyurethane resin thus formed is soft and resilient. The reaction that produces the polyurethane resin is accelerated by the employment of a tertiary amine catalyst (JA 73, 74, col. 1, lines 67-68 and col. 3, lines 16-41). This reaction, of course, will take place in the absence of a catalyst, but not with sufficient speed to retain the carbon dioxide bubbles. The catalyst does not react with the other chemicals present, being employed only to promote and accelerate the polyurethane reaction (JA 31).*

In finally rejecting the claim the Examiner took the position that the steps of claim 28 were anticipated (met) by Simon (JA 81), although he recognized that the materials recited in the steps for carrying out the process were different from those of Simon.

The Board of Appeals in affirming also relied solely upon Simon (JA 103), holding that the difference in the materials employed did not confer patentability on the claim.

The District Judge, in a prematurely rendered Opinion prior to the time set for filing of appellant's post-trial brief, which Opinion he subsequently vacated and then reinstated after such filing,* likewise found the claim unpatentable by reason of the Simon patent. He said:

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* The Trial Court found that tertiary amine catalysts were used in the production of polyurethanes prior to 1952. However, this has no bearing upon the case because the record is barren as to the necessity of using such a catalyst for making a foam resilient. In the present state of the record such a catalyst could equally well have been used to make a rigid foam.

> "In view of the conclusion reached by the Court, it is only necessary to discuss the Simon et al reference." (JA 112)

and then went on to hold that the only difference over Simon recited in claim 28 was the materials employed and that these materials were analogous to Simon's.

The District Judge did this without reference to appellant's testimony other than to note that the use of tertiary amines as a catalyst was old in the art (JA 113), something wholly immaterial and irrelevant to the issue of the patentability of the claim.

STATUTES INVOLVED

35 U.S.C. provides in part:

§100. DEFINITIONS

When used in this title unless the context otherwise indicates –

(a) The term "invention" means invention or discovery.

(b) The term "process" means process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material. July 19, 1952, c. 950, §1, 66 Stat. 797.

§101. INVENTIONS PATENTABLE

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title. July 19, 1952, c. 950, §1, 66 Stat. 797.

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* When the Judgment was first rendered the Judge had before him the post-trial brief only of appellee which was filed prior to the date set for the exchange of briefs so that appellant's post-trial brief had not yet been filed. See also the Judge's subsequent Orders at JA 114 and 115.

§102. CONDITIONS FOR PATENTABILITY; NOVELTY AND LOSS OF RIGHT TO PATENT

A person shall be entitled to a patent unless –

(a) The invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or

* * *

(e) The invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or . . . July 19, 1952, c. 950, §1, 66 Stat. 797.

§103. CONDITIONS FOR PATENTABILITY; NON-OBVIOUS SUBJECT MATTER

A patent may not be obtained though the invention is not identically disclosed or described as set forth in Section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made. July 19, 1952, c. 950, §1, 66 Stat. 798.

§145. CIVIL ACTION TO OBTAIN PATENT

An applicant dissatisfied with the decision of the Board of Appeals may unless appeal has been taken to the United States Court of Customs and Patent Appeals, have remedy by civil action against the Commissioner in the United States District Court for the District of Columbia if commenced within such time after such decision, not less than sixty days, as the Commissioner appoints. The court may adjudge that such applicant is entitled to receive a patent for his invention, as specified in any of his claims involved in the decision of the Board of Appeals, as the facts in the case may appear and such adjudication shall authorize the Commissioner to issue such patent on compliance with the requirements of law. All the expenses of the proceedings shall be paid by the applicant. July 19, 1952, c. 950, §1, 66 Stat. 803.

STATEMENT OF POINTS

1. The District Court erred in holding appellant's claim 28 unpatentable over Simon et al patent No. 2,639,252, notwithstanding that claim 28 recites:

(a) lining a mold with a film consisting essentially entirely of one of two certain resins, whereas said Simon et al patent discloses lining a mold with a layer of fibrous material which may or may not be impregnated with a resin; and

(b) reacting chemicals in the mold to form a resilient foamed body, whereas said Simon et al patent discloses reacting chemicals in the mold to form a body that is not described as resilient and is described in terms which unmistakably characterize said foamed body of the Simon et al patent as rigid.

2. The District Court erred in holding that the materials recited in the method steps of appellant's claim 28 were analogous to those used in said Simon et al patent, notwithstanding that:

(a) the fibrous layer with which the Simon et al patent lines the mold is completely different from a purely resin film with which appellant lines the mold and whereby appellant obtains a different result; and

(b) the reaction mixture which said Simon et al patent introduces into the mold creates a rigid foamed body and is completely different from the reaction mixture which appellant introduces into the mold to create a resilient foamed body.

3. The District Court erred in agreeing with the decision of the Examiner and of the Board of Appeals that said Simon et al patent discloses the steps of appellant's claim 28 and that it is immaterial whether the product produced by said Simon et al patent is rigid or flexible, despite the evidence adduced at the trial de novo that rigid and resilient foamed bodies have dissimilar physical characteristics and that different chemicals are used to produce the different kinds of foamed bodies.

4. The holding by the District Court that the reaction mixture of appellant's claim 28 was known to the art at the time appellant's application was filed has no support in the evidence adduced at the trial _de novo_.

5. The District Court's holding that the use of tertiary amine catalysts in the production of polyurethanes was known prior to 1952 was immaterial and does not support the District Court's holding of non-patentability. There was no proof that it was because of the inclusion of such a catalyst that a foamed polyurethane would be resilient.

6. The District Court erred in holding that the difference between the subject matter of appellant's claim 28 and the prior art is obvious to one skilled in the art to which the subject matter of the invention pertained, no evidence in support of such a holding having been submitted by appellee at the trial _de novo_.

7. The District Court failed to hold that appellee's reliance on fresh prior art at the trial _de novo_ was an admission that the rejection by the Board of Appeals of appellant's claim 28 was not justified on said Simon et al patent alone and hence destroyed the presumption of correctness attaching to the decision of the Examiner and the Board of Appeals.

8. The District Court failed to apply the principle that the presumption of correctness attaching to the decision of a governmental administrative agency did not carry over to fresh prior art introduced by appellee at the trial _de novo_, _Switzer_ v. _Watson_, 183 F. Supp. 467, 474 (D.D.C. 1960).

9. The District Court should have held and given patentable weight to the evidence adduced at the trial _de novo_ establishing that the fibre glass skin disclosed by the Simon et al patent was rigid and that the foamed body disclosed by this patent was rigid.

10. The District Court erred in failing to apply the principles of the decision of the Court of Appeals for the District of Columbia Circuit in _Stradar_ v. _Watson_, 100 App. D.C. 289, 244 F.2d 737 (D.C. Cir. 1957) to the present case.

11. Abbott v. Coe, 71 App. D.C. 195, 109 F.2d 449 (D.C. Cir. 1939) is not applicable here because the Board of Appeals in affirming the Examiner shifted the grounds of rejection from 35 U.S.C. §102 under which the Examiner had made the final rejection to 35 U.S.C. §103 and the Solicitor at the trial shifted the grounds of rejection from one of lacking invention over a single reference to one of lacking invention over a combination of plural references, the additional references having been offered at the trial de novo by appellee without previous notice to appellant.

12. The District Court erred in failing to hold that if the evidence presented by appellant at the trial de novo had been before the Patent Office it probably would have convinced the Examiner and the Board of Appeals that appellant's claim 28 was patentable over said Simon et al patent.

SUMMARY OF ARGUMENT

Basically the Opinion below rests upon the presumption that the Patent Office decision is correct. But this presumption was destroyed by the material evidence introduced at the trial de novo under 35 U.S.C. §145 which evidence was not before the Patent Office and clearly showed patentability of claim 28 over the Simon patent. This evidence consisted of the testimony of an expert witness and of a research chemist and also included physical exhibits. Such testimony and physical exhibits were not contradicted by the defendant. Indeed, appellee's only new evidence consisted of two previously uncited prior art patents that did not rebut any of the testimony or exhibits which were submitted by appellant. The effect of appellant's new evidence was to overcome the presumption of correctness which attached to the Patent Office decision and so the Trial Court was free to reach its own and a different conclusion. Under these circumstances, the present case is not to be governed by cases such as Abbott v. Coe, 71 App. D.C. 195; 109 F.2d 449 (D.C. Cir. 1939), but rather by cases such as Stradar v. Watson, 100 App. D.C. 289; 244 F.2d 737 (D.C. Cir. 1957).

Indeed, appellant respectfully contends that the record before the Patent Office and the evidence before the Trial Court demonstrates that no weight at all should be given to the Patent Office decision. This presumption is based upon the presumed expertise of the Examiners. But the lack of such expertise in this case is shown by the continued shifting by the Patent Office of its grounds of rejection.

Appellant also contends that not all of the steps of claim 28 are disclosed by Simon, and in particular, that the first step of claim 28 which calls for providing the flexible skin cover of the resilient article by forming a film as a lining inside the mold is not found in the Simon patent; because in Simon the initial step is to apply a fibre glass fabric to the inside of the mold and such a fabric cannot be made to follow the contour of the mold or to stay close to the surface thereof in the manner that a film can.

Still further, appellant respectfully contends that even if the manipulative steps of claim 28 and of Simon were considered to be the same, which is not admitted, the manipulative steps cannot be separated from the chemicals employed therein.

The series of steps including their sequence and the chemicals employed in each step must be considered as a whole and when so considered the process claim in issue clearly presents patentable novelty. In other words, although the steps might be old in a procedural sense, Simon fails to teach the use of these steps with the chemicals set forth in claim 28 to produce the novel result of the claimed invention.

Moreover, the materials treated by the procedural steps of Simon have been shown by evidence adduced at the trial not to be analogous to the materials treated by the procedural steps of claim 28. Nor does the additional prior art received into evidence on behalf of appellee show any analogy between the aforesaid materials.

Appellant contends that the evidence adduced at the trial de novo showed that the differences between the subject matter of the method claim 28 and the prior art as exemplified by Simon, even when supplemented by the other references, rendered the claim patentable in that the method of claim 28 considered as a whole with its steps and chemicals would not have been obvious to a person having ordinary skill in the art; and the claimed invention therefore meets the requirements of 35 U.S.C. §103, and qualifies particularly under 35 U.S.C. §§100(a), 100(b) and 101 which provide that a person who invents or discovers a new use of a known process is entitled to a patent for the same. That such new use is present here is admitted, it being recognized that the materials employed are different and that the process results in the production of an entirely new article.

Finally, appellant respectfully urges that there is no presumption that the Trial Court was correct with regard to its holding that the invention was [redacted] obvious because such a holding is a conclusion of law which is subject to review by an appellate court, Copease Manufacturing Co. v. American Photocopy Equipment Co., 298 F.2d 772 (7th Cir. 1961).

Because this conclusion of law was reached even before the Court had the benefit of appellant's post-trial brief, it requires special review.

ARGUMENT

I.

THE INVENTION OF CLAIM 28

The process of the claim comprises first coating the interior of a mold with a film (which is inherently flexible) consisting essentially entirely of a resin which is one of two specified kinds. After being thus lined by the application of such a film the mold is then partially filled with the chemical ingredients that will produce a resilient polyester polyurethane foam, and the chemical ingredients are allowed to react to produce a body of said resilient foam. The adhesive nature of the foam allows the foamed body to adhere to the film. Then the foamed body is allowed to cure and bond to the film. The foregoing method is set out in detail on page 6 of PX 1 (JA 70) of the application as filed, and the filled mold is shown in Figure 6 (JA 72) of the drawings accompanying said application. By this method there is produced within the mold a composite body such as a seat cushion or arm rest which constitutes a resilient polyurethane core having a flexible protective cover unitary therewith. It should be noted that the film, being formed directly on the interior surface of the mold, permits lining the mold as by painting, spraying or slushing (JA 50), the advantages whereof will hereinafter be pointed out.

II.

CLAIM 28

For convenience, claim 28 is set out below:

> "A method of making a molded laminated product comprising lining the inner surface of a mold with a film consisting essentially entirely of a resin selected from the group consisting of polyvinyl chloride resin and curable polyester resin, partially filling the mold with a reaction mixture of (1) a polyester resin derived from a polycarboxylic acid and a polyhydric alcohol, (2) an organic diisocyanate, (3) water, and (4) a tertiary amine catalyst; allowing said mixture to react to form a resilient foamed body within said mold and allowing said foamed body to cure and to bond to said film." (JA 3)

By this method an article of the exact shape of the mold is produced having a resilient body and a flexible protective coating. A cushion or arm rest would be a good commercial example of the article.

As observed earlier, the prior art on which the claim was rejected by the Examiner, the Board of Appeals and the Trial Court was the Simon patent only.

III.

THE SIMON PATENT

The Simon patent (JA 81), discloses the production of a rigid polyester polyurethane foam in a mold which previously is lined with a fibrous material such as fibre glass fabric that may or may not have been preimpregnated with a resin. Simon describes the foamed resin as having high strength (JA 86, 87, col. 3, line 1; col. 6, line 13) and, specifically, a high "compressive" strength (JA 87, col. 6, lines 15-16). The fibre glass fabric lining can, according to Simon, be produced in any one of three ways. The first way (JA 87, col. 5, lines 10-16) is to preform the fibre glass fabric so as to fit the mold, to impregnate the fabric with a resin and to cure the resin so as to make a rigid skin. The second way (JA 87, col. 5, lines 16-21) is to arrange and support an unimpregnated fibre glass fabric on the mold surface. The third way (JA 88, col. 8, lines 55-64) and the one which it would appear that appellee considers the most relevant in the present proceedings, is to saturate the fibre glass fabric lining with a laminating resin before or after the mold is lined with such fabric.

After the mold is lined in one of these three ways there are introduced into the mold the chemical ingredients that will react to produce a rigid foamed polyurethane body. The mixture is allowed to react to form said rigid foamed body and the rigid body is allowed to cure and bond to the lining. The article thus formed is rigid and has excellent strength to protect, house and support objects. Specifically, it is shown as a "radome" which is a strong housing for radar equipment. The patent generally talks of the superior and greater physical strength (JA 85, col. 1, line 42 and col. 2, line 22) of the article produced by the Simon method.

IV.

THE NEW EVIDENCE BEFORE THE COURT

At the trial before the District Court on February 12, 1963, the appellant presented the testimony of two witnesses and introduced several physical exhibits.

One witness, Isaac L. Newell, was a consulting engineer with over thirty years in chemistry and over twenty years in plastics (JA 14-17). The witness has worked in the field of rigid polyurethane foams since the late 1940's (JA 15, 17) and holds patents in the field (JA 15). Said witness also had been familiar with resilient polyurethane foams like those called for by claim 28 for over seven years prior to the date of the trial (JA 18-19), having become familiar with them not long after they came into use (JA 18-19). Mr. Newell had no connection with appellant, except for his appearance as a witness (JA 16). His integrity or technical qualifications were not impeached or challenged by the appellee.

The other witness, Otto Ziemann, was employed by an affiliate of appellant as a research chemist on polyurethane foams (JA 10-11). He had worked in the polyurethane field for nearly five years preceding the trial. He was thoroughly familiar with the patent application in suit (JA 12) and with U.S.L.P. No. 2,961,418 (JA 11) obtained by the same inventors of the suit application, having made foams according to all of the examples of that patent (JA 12). Mr. Ziemann performed the demonstrations at the trial (JA 19-23). His integrity was not challenged by the appellee.

The evidence at the trial de novo showed that a resilient polyurethane foam was utterly dissimilar in its physical characteristics to a rigid polyester foam. This was immediately obvious from a comparative inspection of the exhibits offered by appellant.

Exhibits PX 3, 4, 9 and 10 which are examples of resilient polyurethane foams were soft and elastic. They had comparatively little strength in compression, that is to say, when they were compressed they yielded. On the other hand, plaintiff's exhibits PX 13, 14, 15 and 16 which are examples of rigid polyurethane foams were hard and unyielding, just the opposite of a resilient foam.

A resilient polyurethane foam has elasticity, the ability to be deformed without fracture and to return to its original shape after it has been deformed (Newell, JA 40). By way of contrast a rigid polyurethane foam is hard and strong with a high tensile strength and is self-supporting (Newell, JA 40); it has no resilience and cannot be deformed without breaking (Newell, JA 44). The limitation that the reacting chemicals create a formed body which is resilient is foamed in the claim and is of critical importance.

The testimony established that "resilient" and "rigid" are terms used relating to a polyurethane foam (JA 47-48), and that a resilient polyurethane foam is chemically different from a rigid foam (JA 47, 50). A resilient foam is made from a polyester which is chemically different from the polyester used to make a rigid foam. The polyester for a resilient foam is essentially linear (JA 47, 54), whereas a rigid foam is made from a polyester which is essentially branched (JA 47, 54). The same polyester could not be used for a resilient foam as for a rigid foam (JA 50, 52).

The testimony established, furthermore, that the step in claim 28 of lining the mold with a film meant to coat this film on the mold surface as by spraying, painting or slushing, and that a film is a thin, flexible material (JA 50).

As to Simon, the evidence proved many pertinent facts pointing to the unobviousness of claim 28. True, the specific term "rigid" was not used by Simon to describe his foam. It was established, however, at the trial that all of the Simon foams are necessarily rigid (JA 54, 56, 63). Indeed, the appellee conceded that Simon does not give a single resilient foam (JA 63). PX's 15 and 16, examples of a Simon foam, were rigid.

Moreover, as to "lining" the Simon mold with a fibre glass fabric, the evidence showed that the fabric had to be pushed against the mold surface and that for this type of operation the mold surface would necessarily have to be somewhat smooth and that the fabric would be held against the surface of an intricate mold with difficulty (JA 45, 46, 47). Mr. Newell testified that placing of a fibre glass fabric against a mold surface is entirely different from forming a film on such a surface. A film can be put on by brushing, spraying, etc., whereas the fabric has to be mechanically forced against the mold surface and fastened or draped thereon (JA 51-52). Furthermore, the finished article, PX 17, which is an example of a Simon composite product (JA 44), is demonstrative evidence of the rigidity of the fibre glass skin and of the polyurethane core of this reference (JA 44). Such rigidity is in contrast to the composite product, PX 12, produced by the process of claim 28 (JA 27-28) which despite its intricate contour, like a molded piece of "Jello", is an overall resilient article constituting a tough outer protective flexible skin covering bonded to a resilient foamed polyurethane core of complex shape. As Mr. Newell testified concerning the Simon composite article, it had to be a strong, hard object (JA 63) and it would be contrary to the Simon's teaching to use any resilient or soft materials (JA 60, 64). The example given by Simon of an article made according to that invention was a radome and a radome has to be rigid and has to have a tough or hard rigid outer skin (JA 41).

V.

THE PRIOR ART OTHER THAN SIMON

On January 8, 1963 appellant propounded the following interrogatory to appellee:

> "2. Identify each and every piece of prior art in the form of patents, publications, or otherwise, upon which Defendant will rely at the trial to support its assertion that Plaintiff is not entitled to a patent containing claim 28" (JA 6).

On January 23, 1963 appellee answered interrogatory 2 as follows:

> "2. Defendant presently intends to rely upon United States Patent No. 2,639,252 to Simon et al as prior art" (JA 7).

Appellant was not notified of any other prior art up to the time of trial.

However, the appellee marked for identification (JA 33, 34, 62) three additional prior art references, DX 2, DX 3 and DX 4, of which no previous notice had been given appellant. DX 2 and DX 3 were received in evidence without objection by appellant. Objection was made to DX 4 because of lack of notice and the Trial Court reserved decision on this exhibit (JA 62) but never made a ruling, so that this reference is not in evidence.

DX 2, the Van Swaay patent, U.S.L.P. No. 2,759,475, (JA 105) discloses a pliable soft polyurethane foam fixed to a panel by gluing (col. 2, line 20). The panel has to be heated to bend it (col. 2, line 27 and claim 1). No mold is employed and the reference fails to describe the chemical mixture from which the polyurethane foam was derived. The Van Swaay article thus made is a splint.

DX 3, German patent No. 860,109 (JA 109) discloses a resilient foamed polyurethane sponge. No mold is mentioned, nor is there disclosed any laminating action of the polyurethane foam to a film or other body. There is no disclosure of the step of lining a mold. This patent does not disclose water as one of the chemical reactants for making the foamed polyurethane (JA 36).

None of the prior art patents, DX 2, DX 3 or DX 4 (not in evidence) was before the Examiner or the Board of Appeals during prosecution of the suit application.

The appellee introduced no other evidence at the trial and did not offer the testimony of any witnesses.

VI.

THE NEW EVIDENCE CLEARLY ESTABLISHED PATENTABILITY OVER SIMON

The evidence recited under the preceding heading clearly removes the ground of rejection of claim 28 by the Patent Office and the District Court. This evidence establishes by uncontradicted credible testimony and exhibits the following facts:

A. The Step in Claim 28 of Lining (Coating in the Sense of the Disclosure) the Inner Surface of a Mold with a Film Is Utterly Different from the Step of Applying a Fabric to the Inner Surface Of a Mold As Disclosed by Simon.

It will be observed that claim 28 calls for lining the inner surface of a mold with a "film". This film is in contrast to the glass fibre fabric of Simon. A "film" is, by the very term itself, quite different from a fabric. A film is a very thin skin or membrane, that is to say, an attenuated layer or lamina. It inherently possesses flexibility and thus the ability to closely follow the surface of a mold, be it simple or intricate. Mr. Newell described a film as a thin flexible material (JA 50). On the other hand, a fabric has a certain bulkiness. It is of a different order of thickness. This difference between a film and a fabric is emphasized by the limitation in the claim that the film consists essentially entirely of one of two given resins. The phrase "consisting essentially entirely" excludes extraneous materials, such as a fabric, e.g., a glass fibre fabric which would affect the characteristics of the film, Ex parte Davis and Tuukkamen, 80 U.S.P.Q. 448 (P.O. Bd. App. 1948) (not otherwise cited).

From a method point of view, the application of a film rather than a fabric to line the inner surface of a mold provides a distinct advantage. A film, as Mr. Newell said, can be put on by brushing, spraying and the like (JA 51-52). Nothing further has to be done. Its tendency is to cling to the surface of a mold. And because it is thin it can be forced by the expanding reacting chemicals into good contact with the mold surface. On the other hand, a fabric, as Mr. Newell said, has to be pushed, that is to say, mechanically forced, against a mold surface and has to be fastened there, or the fabric has to be draped against a mold surface (JA 52). Thus, the manipulative step of applying a film is essentially different from Simon's step of applying a fabric as a lining to a surface of a mold.

In addition, the skin formed in the Simon patent by a fibre glass fabric as a lining is a rigid skin in the finished product as contrasted with the flexible covering produced through the application of a lining to a mold pursuant to claim 28. The difference between the two is vividly demonstrated by comparison of exhibit PX 12 and exhibit PX 17. Exhibit PX 12, made by the method of claim 28, shows how the film can closely follow an intricate mold surface and also shows how the skin in the finished product remains flexible because it is a film. On the other hand, in exhibit PX 17, the composite product made in accordance with Simon, the fibre glass skin impregnated with a resin is hard, that is to say, rigid. Accordingly, it is abundantly and convincingly clear upon the evidence and exhibits that the step of lining a mold with a film as per claim 28 is not the same as the step of lining a mold with fibre glass fabric as per Simon.

The Patent Office had taken the position that Simon shows a fibre glass fabric impregnated with a wet resin which subsequently is cured and that it would be obvious to omit the fibre glass fabric and leave the resin. Surely, this is a modification which is not within the bounds of the Simon teaching, but rather a modification created, so to speak, post facto, after reading appellant's disclosure. This is indeed to substitute hindsight for inventive foresight. Moreover, Mr. Newell observed that omission of the Simon fabric would not leave sufficient strength and support to make a housing (JA 61), the very purpose of the Simon method. The hypothetical omission, therefore, would defeat Simon's objective and be contrary to Simon's disclosure.

B. The Materials Employed in the Steps of the Claim Are Not Analogous to Those Employed in the Steps Of Simon's Processes.

The difference with respect to the material of the film of claim 28 and the fabric of Simon has already been discussed above. As to the body of the article to be produced there also was considerable testimony as to the difference between the chemicals used to produce a rigid foam and those to produce a resilient foam, as well as to the physical differences between the two types of foams.

The testimony established beyond any doubt that the chemicals used for a resilient foam are essentially linear polyesters, and that the chemicals used for a rigid foam are essentially branched polyesters. Also the testimony established that the foams produced by these two different chemicals have disparate physical properties. Thus, the resilient foamed polyurethane is soft and elastic. This can readily be seen by handling of plaintiff's exhibits PX 3 and PX 4 which are pieces of resilient polyurethane foams. By way of contrast, a rigid polyurethane foam is hard and strong. Plaintiff's exhibits PX 13 and PX 14 are examples of rigid polyurethane foams. If a finger is pressed against a resilient foam it will be observed that such a foam has a low compressive strength. It cannot resist compression. On the other hand, if a finger is pressed against a rigid polyurethane foam, there is no noticeable yielding because a rigid foam has a high compressive strength. There thus is a combination of chemical and physical differences in the chemicals used by claim 28 and the chemicals used by Simon. This combination of differences produces the novel result of the process of claim 28 which under the evidence is not one that would be obvious to a person skilled in the art, in view of the entirely new result obtained.

Appellee introduced the new references, exhibits DX 2 and DX 3, apparently in an effort to show that resilient polyurethane foams were known at the time the invention of claim 28 was made. These exhibits, however, failed to prove this point because they do not employ the same chemicals as those recited in claim 28. The Van Swaay patent, exhibit DX 2, merely teaches the gluing of a pliable soft polyurethane foam layer to a panel to form the inner surface of a stiff splint. The panel has to be heated to be softened. Van Swaay does not teach what chemicals are used.

The German patent, DX 3, describes certain chemicals used for producing a resilient polyurethane foam outside of a mold, but the reacting chemicals fail to include one of the essential reactants employed by appellant and recited in claim 28, to wit, water (JA 36). It should be remembered that the water of appellant's claim 28 enters into the chemical reaction. It is not a solvent. It reacts with the excess organic diisocyanate to produce carbon dioxide (JA 86, col. 3, lines 7-15 and 42-51). The German patent forms its gasses in different manners and never suggests the use of water for this purpose. Hence, the Van Swaay and German patents do not teach the chemical reactants described in method claim 28.

Neither these two new references offered in evidence by appellee at the trial nor any of the oral testimony adduced at the trial shows that the chemicals used by appellant were known to the art when the application was filed. The Simon patent does not disclose the chemicals used to make a resilient foam. The Van Swaay patent does not disclose what chemicals are used; and the German patent fails to disclose water as one of the reactants.

One can only wonder on what basis the Examiner and the Board of Appeals have held in effect that Simon discloses materials which are analogous to the materials of claim 28. Simon does not specify either the use of a film or the use of chemicals which would react to produce a resilient polyurethane foam. It could not possibly have been obvious from Simon alone that the materials of claim 28 could be substituted for Simon, and there is nothing else in the evidence from which such a conclusion can be drawn. Hence, the Examiner, the Board of Appeals and the Trial Court must in the absence of evidence have assumed the asserted analogy of materials. This is an unwarranted assumption and most unfair to inventors of processes involving chemicals. These are notoriously of an unpredictable nature as to their action.

In Naylor v. Alsop Process Co., 168 Fed. 911 (8th Cir. 1909), the Court said:

> "It should also be borne in mind in considering this subject that reasoning by analogy in a complex field like chemistry is very much more restricted than in a simple field like mechanics. This distinction has been frequently recognized by the courts." (Page 919)

The claim in that suit involved a process of aging and bleaching flour in which the sole step was passing the flour, finely divided, through an atmosphere containing a small regulated quantity of gaseous nitrogen peroxide. The defense was that flour had been treated by the same process using ozone in order to bleach it. The argument that the claim was void for want of invention based upon reasoning by analogy was rejected.

See also Badische Anilin & Soda Fabrik v. Kalle, 94 Fed. 163 (S.D.N.Y. 1899), aff'd. 104 Fed. 802 (2nd Cir. 1900) where the Court held:

> "For example, should some material be discovered which solves the storage battery problem, it is hardly to be presumed that he who confers this benefit upon mankind will be denied a patent, because the material on which he operated was well known and his process had been used before on other materials to produce different results." (Page 174)

That these cases go back some years is of no moment. The principle for which they stand has been applied later by the courts. See, for example, Tolfree v. Wetzler, 25 F.2d 553 (3rd Cir. 1928), cert. denied 278 U.S. 628, 49 Sup.Ct. 28, 73 L.Ed. 547 (1928) where the Court held that invention resided in the process of adding to the water in an automobile radiator a leak stopping composition that included a chemical different from that employed in the prior art.

The Patent Office tribunals too have followed this principle. See, for example, Ex parte Wagner, 88 U.S.P.Q. 217, 1951 C.D. 3 (P.O. Bd. App. 1950) where the Board said:

> "It does seem to be quite clear from these decisions that many processes which are old in a procedural sense become new when, by the use of a different agent, a new result is accomplished. In considering the patentability of such processes, it appears that the real criterion is not whether the steps themselves are shown in the prior art but whether the use of the material in the process claimed is suggested by the prior art. It is not considered proper to disregard the specific nature of the material employed in the claimed process which is responsible for the unobvious result and determine patentability of the process solely on the novelty of the physical manipulative steps recited. If the result of the process is unobvious and the particular use of the material is not suggested by the prior art, the process claims should be allowed." (1951 C.D. at page 8)

Other cases in the Patent Office support the principle enunciated in the Wagner case, Ex parte Mohr, 83 U.S.P.Q. 70 (P.O. Bd. App. 1948) (not otherwise cited), Ex parte Zbornik and Peterson, 109 U.S.P.Q. 508 (P.O. Bd. App. 1956) (not otherwise cited), and Ex parte Macy, 132 U.S.P.Q. 545 (P.O. Bd. App. 1960) (not otherwise cited). Moreover, it is to be noted that this Court itself, on this issue of analogous materials, in Stradar v. Watson, 100 App. D.C. 289, 244 F.2d 737 (D.C. Cir. 1957) pointed with approval to the holding by the Patent Office that substituting a tinted plastic plate for a clear plastic plate previously used in the same process was patentable, despite the analogy between the two plates.

C. The Over-all Effect of Utilizing a Film Rather Than A Fabric as a Lining to Make the Skin and of Utilizing The Special Chemicals to Create a Resilient Polyurethane Foam for the Body Is to Produce an Article Entirely New and Different from Simon's.

Mr. Newell testified that Simon proposed to make a radome which is necessarily a rigid structure (JA 41). Indeed, Simon mentions that his polyurethane has a high compressive strength, so that it necessarily is rigid. It is not challenged in the evidence that Simon's finished article has to be a strong hard object and that it would be contrary to Simon's teaching to use any resilient or soft materials (JA 64). No doubt the most convincing evidence in this respect are the two physical exhibits, one an article produced by claim 28, this being PX 12, and the other an article produced by the Simon method, this being PX 17. The article, PX 12, shows how the end product can constitute a piece of upholstery having soft resilient characteristics and yet covered by a skin which protects the core without deleteriously influencing its softness and resiliency. This same exhibit indicates how easy it is to make the composite laminated product to intricate shape such as the shape of the "Jello" mold in which PX 12 was made. PX 17, on the other hand, is a hard, rock-like article, hard both as to its interior and exterior and totally unusable as a cushion. It is difficult to see how appellee could urge that the materials used in Simon and appellant's claim 28 are analogous. True, they may come under some very generic common class, but this does not make materials analogous. A steel spring is not analogous to a steel bar because both are made of steel; nor is a frankfurter with its flexible skin and soft interior analogous to a coconut with its hard skin and hard interior, although both are foods and are composed of organic chemical compounds. The rigid radome structure of Simon is not analogous to a contoured cushion or an arm rest covered with a flexible plastic film. Yet both may have foamed polyurethane cores, rigid for the former, soft, flexible and resilient for the latter.

VII.

THE NORMAL PRESUMPTION OF CORRECTNESS OF THE PATENT OFFICE DECISION IS NOT PRESENT IN THIS CASE

Ordinarily, a district court will rely upon the expertise of the Patent Office and it is for this reason that normally a presumption of correctness attaches to a Patent Office decision. However, a review of the proceedings will make it clear that such presumption has been destroyed in the present case.

The Examiner finally rejected claim 28 (JA 98) [this rejection was applied to claim 21, but was subsequently transferred to claim 28 (JA 100)] as being "fully met by", which is to say, anticipated or shown in its entirety, by Simon. Such language – "fully met by" – is the language which Sec. 707.07(d)(1) of the Manual of Patent Examining Procedure instructs an Examiner to use if "the claim reads element for element on the reference . . .". This is a rejection under 35 U.S.C. §§102(a), (b) and (e). Such a rejection is made where every element of the invention of a claim is completely shown by a reference, Technical Development Corp. v. Servo Corp. of America, 183 F.Supp. 92, 95 (E.D. N.Y. 1960). In making this rejection the Examiner took the position that the manipulative steps of the claim were the same as Simon's and that the materials employed in the steps of the claim were different from Simon's, but that the materials recited in claim 28 had nothing to do with the method of the claim.

But the Board shifted the ground of rejection to "unpatentable over" (JA 103) – as distinct from "fully met by" – Simon. "Unpatentable over" is the language which Sec. 707.07(d)(2) of the Manual of Patent Examining Procedure instructs an Examiner to use if "there are differences between the subject matter set forth in the claim and the reference relied on . . .". See generally Application of Dwyer, Jewell, Johnson, McGrath and Rubin, 317 F.2d 203, 206 (C.C.P.A. 1963). Such a shift was necessary because Simon's lining step and his materials are not the same as those recited in claim 28. The Board's rejection was thus under another section, to wit, 35 U.S.C. §103, namely that the subject matter of the invention as a whole although not identically disclosed by prior art would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said invention pertains.* The fact that the Board found it necessary to change the ground of rejection by its implicit reliance on a different statutory section is in derogation of the Examiner's final rejection.

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* Application of Sinex, 309 F.2d 488 (C.C.P.A. 1962) emphasizes the distinction between 35 U.S.C. §§102 and 103.

However, on the trial before the District Court the Patent Office was dissatisfied with the ground of rejection relied upon by the Board of Appeals, for it once again shifted its grounds and this time added two new references (JA 33, 34) and attempted to add a third new reference (JA 62) which the Court did not admit. Thus, the rejection was no longer that claim 28 was unpatentable over Simon alone, but rather that claim 28 was unpatentable over Simon in combination with the three new references. A rejection on a combination of references is recognized by the Manual of Patent Examining Procedure, Sec. 707.07(d)(3) as a ground of rejection different from the foregoing two grounds.

Accordingly, the grounds of rejection by the Patent Office shifted from anticipation by Simon alone to obviousness over Simon alone and finally by the Solicitor to obviousness over Simon in combination with three other references. Such vacillation and unsureness as to the grounds of rejection hardly bespeak true expertise on the part of the Patent Office.

Moreover, the Solicitor's new ground of rejection is not clothed with a presumption of correctness because it was not made by the Examiner or by the Board of Appeals. The Van Swaay and German patents were not considered by the Patent Office or applied to claim 28. The Patent Office made no findings or decisions as to these new references. In such a case where a new defense first was presented in the district court no presumption of correctness attaches to any position taken by appellee with respect to these patents. Switzer v. Watson, 183 F.Supp. 467, 473-474 (D.D.C. 1960).

Because the District Judge rendered his original opinion without benefit of appellant's post-trial briefs and without making any evaluation of the pertinent new evidence, it is thought that what prompted his decision was the presumption normally attaching to Patent Office decisions. This presumption has been completely destroyed on the record here.

VIII.

THE DECISION OF THE BOARD OF APPEALS IS BASED UPON ASSUMPTIONS WHICH THE EVIDENCE AT TRIAL HAS DEMONSTRATED TO BE ERRONEOUS

When the Board of Appeals affirmed the Examiner and in so doing shifted the ground of rejection, it premised its decision upon certain assumptions in the absence of which such decision unquestionably would have been incorrect. These assumptions were: that it was immaterial that the glass fabric was present in the lining; and that it was immaterial that the foamed body was resilient.

The testimony and exhibits discussed at length above show these assumptions to be false, and, moreover, the witness Newell, who was steeped in this art, testified that each of the assumptions was not true.

Thus, the Board said:

> "Since this claim is a method claim, he (the Examiner) considers it to be immaterial that a glass fabric is present in the skin." (JA 102)

Concerning this remark of the Board, the witness Newell said that putting a glass fabric in the mold:

> ". . . requires a different method than putting a film on such as by brushing, spraying and the like. The glass fabric has to be mechanically forced to the surface of the mold, and it has to be fastened or draped within the surface of the mold, which to my opinion, is entirely different than producing a film on the surface of the mold." (JA 51-52)

The Board made light of the limitation in the claim to the special reacting chemicals selected to make a resilient foam and read this limitation out of the claim saying:

> "It is not a limitation on the step of the process." (JA 103)

When questioned about this section of the Board's opinion, Mr. Newell testified:

> "It requires the choice of the polyester resin in the mixture to determine whether or not it is going to be resilient or rigid." (JA 52)

and subsequently said that:

> ". . . resilient and rigid are the opposite of one another; and when one is resilient it can't be rigid and vice versa." (JA 53)

IX.

THE PRESUMPTION, IF ANY, OF CORRECTNESS OF THE PATENT OFFICE ACTION WAS DESTROYED BY APPELLANT'S NEW EVIDENCE AND THE DISTRICT COURT'S DECISION IS NOT CONSISTENT WITH THIS NEW EVIDENCE

As has been set forth *in extenso* above, testimony and exhibits were presented at the trial which demonstrated the substantial difference between the step of coating a mold with a film and the step of lining a mold with a fabric; between the chemicals used to make a resilient foam and the chemicals used to make a rigid foam; and between a composite laminated body with a flexible covering and a resilient core and a composite laminated body with a hard skin and a hard core. This evidence was uncontradicted by appellee and was evidence which was not presented to the Patent Office.

In the face of such material, uncontradicted and new evidence:

> ". . . the District Court was not controlled by the presumption of correctness which attached to Patent Office action, but was free to reach its own conclusion on the basis of the fuller information which was before it." *Stradar v. Watson*, 100 App. D.C. 289, 244 F.2d 737, 739 (D.C. Cir. 1957)

The present case does not fall within the rule of *Abbott* v. *Coe*, 71 App. D.C. 195, 109 F.2d 449 (D.C. Cir. 1939). Reading of that case clearly shows that it applies only where a district court's decision is consistent with the evidence. Here, it has been convincingly demonstrated that the opinion of the District Court as to obviousness is inconsistent with the evidence. The District Court's opinion as to obviousness of the subject matter of the claim is a conclusion of law and is subject to review on appeal since an appellate court is in as good a position as a district court to pass on the law, Copease Manufacturing Co. v. American Photocopy Equipment Co., 298 F.2d 772 (7th Cir. 1961).

CONCLUSION

The decision below rests upon a presumption normally attaching to a Patent Office decision which presumption does not apply to this case. The basic premise that the claim was not patentable over the Simon reference was destroyed by appellant's evidence. Were it not for the general tendency to adhere to this principle of presumed correctness of Patent Office decisions, the conclusion as to non-patentability would not have been reached here. Legal rules of general application often eclipse a more basic principle, namely, that each case stands on its own merits. Here the decision by the Patent Office relied on assumptions and reasoning proved to be false by the clear, convincing and uncontradicted testimony at the trial. More particularly, the basic ground that the manipulative steps were old in Simon was proved to be erroneous because the steps in the claim are intertwined and limited by the materials used in carrying these out; and the latter, being admittedly different and proved to be non-analogous as well, should have been considered as distinguishing limitations rendering the claim patentable.

As was said in the Court of Customs and Patent Appeals in Application of Bloomer, 178 F.2d 407, 411 (C.C.P.A. 1949):

> "We may say, however, that we can discern no reason why it is not entirely proper to consider the material which is being acted upon and the solvent itself as limitations, and we do not think it inconsistent with the decision of the Supreme Court in the case of Sinclair & Carroll Co., Inc. v. Interchemical Corporation, 325 U.S. 327, 65 S.Ct. 1143, 89 L. Ed. 1644, to do so. We think it is a fair inference that the materials and solvents in the prior art cited here were considered as limitations by the Patent Office experts

when the patents were granted. Indeed, we fail to see how an intelligent conclusion can be reached in a case by treating steps or features, such as proportions, or ratios, and temperature, in an abstract manner, disregarding materials and their nature.

"Therefore, we have considered here the material containing the acids and the material constituting the solvent as limitations."

The Decision Below Is Clearly Inconsistent With The Evidence; It Should Be Reversed And The Commissioner Of Patents Ordered To Issue To Appellant A Patent Including Claim 28.

Respectfully submitted,

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BRIEF FOR APPELLEE

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

APPEAL NO. 18074

HUDSON FOAM PLASTICS CORPORATION, APPELLANT

v.

DAVID L. LADD, COMMISSIONER OF PATENTS, APPELLEE

APPEAL FROM THE JUDGMENT OF THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF COLUMBIA

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United States Court of Appeals
for the District of Columbia Circuit

FILED NOV 12 1963

Nathan J. Paulson
CLERK

APPEAL NO. 18074

STATEMENT OF QUESTIONS PRESENTED

In the opinion of the appellee, the questions presented in this appeal are:

1. Whether the finding of the District Court that, on the evidence before it, the process of claim 28 is unpatentable over the prior art, is so clearly erroneous as to justify or warrant independent review by this Court of the underlying facts, in view of Rule 52(a) of the Federal Rules of Civil Procedure and its prior adjudications in this field?

2. Whether the finding of the District Court that, on the evidence before it, the process of claim 28 was an old process applied to analogous materials known to the art when the application at bar was filed has a rational basis in the record, so that no warrant exists for an independent review of such evidence by this Court, pursuant to Rule 52(a) of the Federal Rules of Civil Procedure and its prior adjudications in this field?

712-545—63——1

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United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

APPEAL NO. 18074

HUDSON FOAM PLASTICS CORPORATION, APPELLANT
v.
DAVID L. LADD, COMMISSIONER OF PATENTS, APPELLEE

APPEAL FROM THE JUDGMENT OF THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF COLUMBIA

BRIEF FOR THE COMMISSIONER OF PATENTS

INTRODUCTION

This is an appeal from the order (J.A. 115) of the United States District Court for the District of Columbia dismissing the complaint in an action brought under 35 U.S.C. 145, in which, the appellant (plaintiff), owner of the patent application filed by Christopher L. Wilson and Oscar Shuffman on July 8, 1954, and entitled "Foamed Polyester Resin Laminated Products," sought to have the Court authorize the issuance of a patent containing claim 28, the sole claim in issue in that application.

The complaint was dismissed by the trial Court after a hearing at which appellant introduced expert testimony in an effort to show patentability. The

District Court rendered an opinion (J.A. 111) including therein findings of fact and separate conclusions of law (as indicated in the order; J.A. 115), sustaining appellee's refusal to grant the requested patent. Notice of appeal was timely filed on May 27, 1963. As indicated in the opinion, the tribunals of the Patent Office have allowed four claims of the involved application.

APPELLANT'S APPLICATION

The specification of the application at bar (J.A. 66) discloses several species of foamed diisocyanate modified polyester resins (known as foamed polyurethane) laminated products. These species are markedly distinct and generally unrelated except insofar as they broadly concern laminated foamed polyurethane products. Thus, allowed claims 19, 20 and 26 involve the species of Figures 2 to 4 in the drawing (J.A. 72), claim 27 was regarded by the Board of Appeals as being "intended to read on the modifications of Figures 2 to 5," and claim 28, at issue in this appeal, relates solely to the species of Figure 6.

The subject matter at issue here is generally described on pages 66 to 68 of the Joint Appendix, more specifically described in the penultimate paragraph of the specification (J.A. 70, 71), and illustrated in Figure 6 of the drawing. It involves a method of making a molded laminated product comprising four steps:

> (1) lining the inner surface of a mold with a film of either a curable polyester resin or a previously cured polyvinyl chloride resin

(2) partially filling the mold with a reaction mixture (to form a resilient foamed diisocyanate modified polyester or polyurethane body) of

(a) a polyester derived from a polycarboxylic acid and a polyhydric alcohol

(b) an organic diisocyanate

(c) water

(d) a tertiary amine catalyst

(3) allowing the mixture to react to form the resilient foamed body

(4) allowing the molded product to cure

The specification indicates that the product is allowed to cure for a period of time usually at least one hour.

Claim 28 on appeal is drawn to the four step process as described above.

THE PRIOR ART

Simon et al., 2,639,252, May 19, 1953 (J.A. 81).

Van Swaay, 2,759,475, Aug. 21, 1956 (J.A. 105) (Filed Sept. 30, 1953).

German patent (English translation) 860,109, Dec. 18, 1952 (J.A. 109).

Simon et al. disclose a method for producing a molded laminated diisocyanate modified polyester or polyurethane foam product comprising four steps described in the patent specification as follows (Col. 4, lines 11 to 22):

> The method of the invention, as illustrated in Figures 1 to 5 inclusive, may be said to comprehend the general steps of providing outer laminated material or skin material 14 on the surfaces of a mold 10-12, introducing a reactant alkyd resin—polyisocyanate mixture 15 into the

> skin-lined mold cavity, allowing the mixture to react to form a foamed or cellular core 16 between and bonded with skin lamination 14, and then preferably post-curing the resultant laminated structure at slightly elevated temperature.

The patent indicates that the materials used for the mold lining or skin will depend upon intended use (Col. 4, lines 56 to 59) and may contain fibre glass fabric or matting or other materials (Col. 4, last paragraph) in one layer or in several layers impregnated with a laminating resin (Col. 5, top paragraph). Three general types of mold linings or skin are discussed (Cols. 7 and 8). In the first type, the skin material is prelaminated and preformed and contains polymerized cured resins and securely bonds with the foamed or cellular core (Col. 7, top paragraph). In the second type, the skin material comprises one or more layers of soft fabric which is penetrated by and embedded in the foamed product resulting from the polyurethane reaction mixture, resulting in an effective lamination and bonding (Col. 7, bottom paragraph).

The third type of skin material or lining, in the Simon et al. patent, may be one or more layers or plies of fibre glass fabric, matting, felt or the like, saturated or partially saturated with a laminating resin wherein the resinous material copolymerizes in the surface contact areas with the foamed polyurethane core as the latter is formed (Col. 8, bottom paragraph). The laminating resins employed in the skin may be selected from different classes of resins including unsaturated polyesters (Col. 14, bottom). The lining or skin resin may be unpolymerized (uncured)—in a liquid or semi-liquid state—capable of being bonded to the foamed core as by copolymerization at the contacting surfaces during reaction of the core mixture (Col. 17, bottom). The reaction mixture generates exothermic heat which "cures or polymerizes the laminating resin. Thus the laminating resin is polymerized and initially cured simultaneously with the core 16, making for a more uniform and stronger product" (Col. 18, lines 50 to 56). The product may be subsequently subjected to "post-cure" at from 125° to 225° F. for from 10 to 20 hours (Col. 18, lines 60 to 62). This product is described as having many uses, and particularly for "making enclosures, housings and the like, for electrical apparatus, and like equipment" (Col. 1, top).

Van Swaay discloses a polyurethane foam laminate comprising bonded layers of a solid thermoplastic material (as polyethylene) and a resilient polyurethane foam characterized as "pliable and soft" (Col. 2, lines 9 to 21).

The German patent discloses synthetic sponges characterized as "highly porous" and having "high elasticity with low bulk density" (J.A. 110, paragraph preceding Example 1). The synthetic sponges are disclosed as the reaction products of organic di-isocyanates with high molecular weight (polymeric) esters derived from polycarboxylic acids and polyhydric alcohols (J.A. 109). The patent states that the reaction can be influenced by catalysts such as triethylamine (a tertiary amine), (J.A. 110, middle paragraph).

SUMMARY OF ARGUMENT

1. The District Court found that the process set out in claim 28 is an old process applied to analogous materials clearly shown to have been known to the art when the application at bar was filed. This is a finding of fact and not a conclusion of law according to adjudications of this circuit. Therefore, only if this finding of fact is clearly erroneous is this Court justified in reversing the decision of the trial court under Rule 52A.

2. Claim 28 (J.A. 102) is drawn to a four step method of making a molded laminated product. Simon et al. (J.A. 81) disclose precisely the same general steps for producing a molded laminated foamed di-isocyanate modified product. The claim differs from the process of Simon et al. solely in the particular materials. However, the materials employed by appellant are analogous to those used by Simon et al. and this scientific fact has not been controverted by any probative evidence before the Court. Since the patent to Simon et al. discloses the steps of the claimed method employing analogous materials it is immaterial whether the foam produced by the patentee is rigid or flexible or whether or not a glass fabric is present in the skin. Further, the evidence (constituting the testimony as well as the patent to Van Swaay and the German patent) shows that the materials indicated in claim 28 were known to the art at the time the application at bar was filed. The

appealed claim defines no more than the application of an old process to different but analogous old materials. The use of such old materials in an old process is obvious. The law is well settled that this does not constitute patentable subject matter. *Paramount Publix Corp.* v. *American Tri-Ergon Corp.*, 294 U.S. 464, 473; *Graver Tank and Mfg. Co. et al.* v. *Linde Air Products Co.*, 336 U.S. 271, 278–9; *In re Swain et al.*, 33 CCPA 833, 154 F. 2d 118; *In re Ducci*, 42 CCPA 1088, 1094, 225 F. 2d 683; *In re Freedlander et al.*, 35 CCPA 1209, 1211, 168 F. 2d 535; *In re Crossley et al.*, 34 CCPA 818, 823, 158 F. 2d 933; *In re Berger*, 31 CCPA 1234, 143 F. 2d 971; and *In re Becker*, 26 CCPA 922, 926, 101 F. 2d 557. Hence, the appealed claim fails to define subject matter that is patentable under the law (35 USC 103).

ARGUMENT

1. Findings of fact by the District Court

It is respectfully submitted that, in an action to obtain a patent, the basic issue before the Court is whether the presumption that the decision of the Patent Office is right, reinforced by the presumption that the trial court is right is overcome by the evidence presented. In other words do the findings of those tribunals lack substantial support in the record? This is the established rule of this Court. *Abbott et al.* v. *Coe*, 71 App. D.C. 195, 109 F. 2d 449; *Esso Standard Oil Co.* v. *Sun Oil Co.*, 97 US App. DC 154, 229 F. 2d 37. Only if evidence in a particular case overcame these presumptions and showed that the finding of non-patentability is "clearly wrong" does this Court reverse. *Bullard Co.* v. *Coe,* 79 US App. DC 369, 147 F. 2d 568; *Watson* v. *Bersworth et al.,* 102 US App. DC 187, 251 F. 2d 898; *Schafer* v. *Watson,* 109 US App. DC 360, 288 F. 2d 144.

In the present case, agreeing with the decision of the Examiner and the Board of Appeals, the District Court found that the method steps of claim 28 "do not differ from those of the Simon et al. patent," except in the use of materials analogous to the materials of the old method, that the materials in claim 28 were "clearly shown to have been known to the art when the application was filed," and that "it is clear that the use of such materials in the method of Simon et al. would be obvious to one skilled in the art." Further, the Court held that it is immaterial whether the product produced by the patent is rigid or flexible, or whether or not glass fabric or any other fabric is present in the skin (J.A. 113). The appellant must show that these findings of fact are "clearly wrong" to prevail.

2. Method steps of claim 28 correspond to method disclosed by Simon et al.

A comparison of the steps in the claimed process and the corresponding process disclosed by Simon et al. (J.A. 86, Col. 4, lines 11 to 22) clearly shows that the claimed steps are disclosed in the patent.

Thus the patentee speaks of (1) providing outer laminating or skin material 14 on the surface of a mold, then (2) introducing a reactant alkyd resin-polyisocyanate mixture 15 into the lined mold cavity, (3) allowing the mixture to react to form a foamed core between and bonded to the skin laminations, and then (4) post-curing the resultant structure at slightly elevated temperature. These steps correspond exactly to the steps recited in claim 28 at issue of (1) lining the mold surface, (2) filling the mold partially with a foaming mixture, (3) allowing the mixture to react within the mold, and (4) curing to bond the foamed body to the film. Consequently, insofar as the operations or steps recited in claim 28 are concerned, those steps and that method are old in the art, and the only point at issue is whether the old process is applied to analogous materials.

3. Materials employed in Claim 28 and by Simon et al. are analogous

The District Court's finding that the materials employed in the method of the prior art are analogous to the materials specified in claim 28 is fully supported by the evidence. A comparative consideration will demonstrate that the trial Court did not err in making the finding. Considering the limitation to the lining, which is defined in the claim as "a film consisting essentially entirely of a resin selected from the group consisting of polyvinyl chloride resin and curable polyester resin", and comparing that with the patent which states that the skin or lining comprises a curable polyester resin (J.A. 88, Col. 8, bottom) it is evident that there is identity since each uses a polyester resin. The fact that the patent indicates that a fibrous material or fibers may be present in the resin skin does not make the analogous material non-analogous.

With respect to the reaction mixture defined in step (2) of the claimed process, the patent describes the use of a reactant mixture containing a polyester resin derived from a polycarboxylic acid and a polyhydric alcohol, an organic dusocyonate and water (J.A. 87, Col. 5; J.A. 39, col. 10) which react to form a cellular or foamed body or core (a polyurethane foam) bonded to the skin (J.A. 86, col. 4; J.A. 88, col. 8, bottom; J.A. 93, bottom of cols. 17 and 18). The evidence indicates that the use of a tertiary amine catalyst in forming polyurethane foams was known when the application was filed. (J.A. 31, middle; J.A. 110, middle, triethylamine catalyst in German patent). Clearly this mixture is analogous to that used by appellant. Although the foamed product in the patent was not specifically characterized as resilient or rigid, this is entirely irrelevant in view of the clearly analogous nature of the substances employed in the reaction mixtures of the appealed claim and the patent and the analogous character of the products. It is evident from the record that the trial Court's finding that the materials used are analogous is substantially supported by the record.

Although conceding that the materials employed by appellant and the patentees "come under some very generic common class" (Br. 24), the appellant denies that the materials are analogous (Br. 20, 24). The lining of the Simon et al process is urged to be non-analogous, because it is said to contain a fibre glass fabric which would make it rigid and present difficulty in lining the mold, whereas a film can be brushed or sprayed and would result in a resilient product (Br. 16, 18, 19). The reaction mixture of Simon et al is urged to be non-analogous since the polyester components are not identical and the patented mixture results in an allegedly rigid polyurethane foam, which is physically and chemically different from a resilient polyurethane foam (Br. 14, 15, 20).

The appellant's arguments indicate that the materials used in the process defined in claim 28 and those disclosed by Simon et al have physical and chemical characteristics which are common to both. In determining whether materials are or are not analogous it is the similarities rather than the differences which are significant. The common presence of a curable polyester resin in the linings described in the appealed claim and the mold skin disclosed in the process of Simon et al is sufficient to support a finding, that the linings are formed of analogous materials. In this connection, the statement of the Board of Appeals (J.A. 103, 104) that "The lining may be considered as composed of the resin—containing fibers" is significant. Also, the appellant's contention that film can be more easily applied is of no patentable consequence since this would be obvious to one of ordinary skill in the art—and therefore it would be obvious to one so skilled to omit the glass fibers or fabric in the lining of the Simon et al process if ease of application were a factor to be considered.

The foamed character of the polyurethane formed by the reaction mixtures in claim 28 and Simon et al, and the evidence (Br. 15) that both reaction mixtures include polyester resins—albeit that a resilient foam requires a linear polyester and a rigid foam uses a branched polyester—is ample indication that analogous materials are involved. Whatever *specific* materials are employed in the Simon et al process, resulting in resilient or rigid products, is of no consequence in assessing the analogous character of the materials employed by the patentees and recited in the appealed claim, in view of the similarities which have been indicated.

The decision relied upon by appellant in support of the argument as to allegedly non-analogous materials do not aid him. *Naylor* v. *Alsop Process Co.* (Br. 22) is inapposite because, whereas the claimed nitrogen peroxide was effective in bleaching flour, the prior art ozone was shown to damage or taint the flour. *Badische Anilin and Soda Fabrik* v. *Kolle* (Br. 22) is irrelevant on its face from the excerpt quoted by appellant and, further, the claims there in issue were to a product not a process. *Tolfree* v. *Wetzler* (Br. 22) is completely inapposite since obviously non-analogous materials were involved. The Board decision in *Ex parte Wagner* (Br. 22) is totally inapposite since wholly non-analogous materials were involved; the claims reciting a drilling mud admixed with a water soluble cellulose sulfate compound, while the prior art merely disclosed a drilling mud with no additive therein. *Ex parte Mohr* also involve totally different materials; *Ex parte Zbornick et al.* and *Ex parte Macy* are irrelevant. (Br. 23.) *Strader* v. *Wat-*

son (Br. 23) is irrelevant since the prior art did not disclose analogous materials in that there were significant and critical differences between the materials set forth in the appealed claims and those disclosed in the prior art. The decision in *In re Bloomer* (Br. 29), relied upon as holding that the materials acted upon should be considered is determining the patentability of a claimed process, cannot advance the appellant's case since the above discussion clearly indicates that the District Court and the Patent Office tribunals did consider the materials involved, and found them analogous as well as known in the art at the time the application was filed.

4. Materials indicated in claim 28 were known in the art when application was filed

The District Court found "that the materials in claim 28 were known to the art at the time the application involved herein was filed" (J.A. 113). This finding is fully supported by the record. The witness Ziemann admitted on cross-examination that resilient foamed polyurethanes were known before 1954 and that tertiary amine catalysts were used in the production of foamed polyurethanes before 1954 (J.A. 31). Further, on re-direct examination, he indicated that knowledge was based upon what he had heard from others, but in response to the Court's question, he indicated that his information as to the state of the art prior to 1954 could have been based on what he had read (J.A. 32).

Knowledged of resilient foamed polyurethanes in the art before 1954 is also shown by the patent to

Van Swaay (J.A. 107, col. 2, lines 18 to 21) and German Patent No. 860,109 (Translation, J.A. 110, paragraph preceding Example 1). Ziemann testified concerning both patents and acknowledged their teachings (J.A. 33 to 36). Also, further evidence of knowledge before 1954 concerning the use of a tertiary amine catalyst (triethylamine) in the reaction for forming foamed diisocyanate modified polyesters is found in the German Patent (Translation, J.A. 110, middle paragraph), concerning which Ziemann also testified on cross-examination (J.A. 37).

The appellant does not actually deny that the materials indicated in claim 28 were known to the art when the application at bar was filed. Neither does he deny or attempt to controvert the testimony of his witness Ziemann, referred to above, that their use in this particular art was then known. Instead, he chooses to contend that the patent to Van Swaay and the German patent, relied upon by the defendant solely as cumulative evidence, "do not employ the same chemicals as those recited in claim 28" (Br. 20, 21). Since the appellant thus, in effect, concedes that the materials of the appealed claim were known in the art when the application was filed, it is unnecessary to consider his arguments with respect to the Van Swaay and German patents at length. Suffice it to say that the appellant recognizes that these patents disclose resilient polyurethane foams (Br. 17). Therefore, it would appear evident that the record clearly indicates that such foams and the method for their preparation corresponding to that recited in claim 28 was well known in the art prior to 1954.

5. Obviousness of the claimed method

The District Court found that, since "the evidence shows that the process set out in claim 28 is old and that the only difference is that it recites analogous materials which are clearly shown to have been known to the art when the application was filed, it is clear that the use of such materials in the method of Simon et al. would be obvious to one skilled in the art" (J.A. 113). The evidence before this Court clearly supports this finding of obviousness. Reference need be made only to the following testimony of appellant's witness Newell (J.A. 61) to show the correctness of that finding:

> Q. If the art were familiar witn both rigid and resilient polyurethane foams you agree that it would be obvious to substitute one for the other in the method of Simon et al.? A. Yes.

The appellant's argument against the obviousness of the claimed method is based on the contention that the Simon et al. process results in a rigid product (Br 16, top paragraph) whereas the product of claim 28 is resilient and can be used as "a contoured cushion or an arm rest covered with a flexible plastic film" (Br 3, 12, 24). The argument of resilience versus rigidity has been considered at length above. In this connection, it is necessary to point out that there is no disclosure in the specification presented to the

Patent Office that the product of the claimed process can be used as a cushion or arm rest; or that a film is more easily applied as a lining for the mold (Br 78); or that the adhesive nature of the foam is such that it "allows the foamed body to adhere to the film" (Br 11, bottom). Undisclosed advantages cannot be relied upon for patentability. *Abbott* v. *Coe, supra; In Re Stewart,* 42 CCPA 937, 222 F. 2d 747.

The contention by the appellant that the step in claim 28 of lining the inner surface of a mold with a film "is utterly different from the step of applying a fabric to the inner surface of a mold as disclosed" by Simon et al. because fabric has certain bulkiness which impedes handling and positioning and also because it results in a rigid skin (Br 18, 19) is without merit. The appellant's argument ignores the rule that the test is not only what is expressly disclosed in a reference but also what is suggested thereby to one skilled in the art; *In re Marvin,* 42 CCPA 883, 222 F. 2d 271; *In re Milne,* 31 CCPA 918; 140 F. 2d 1003. Hence, the Board of Appeals properly noted, with respect to Simon et al., that "The lining may be considered as composed of the resin containing fibers," and that "we do not consider the differences of the lining to be a patentable distinction since we are concerned with the steps of the method that is claimed" (J. A. 103, 104). It is within the skill of the art to omit the glass fabric or fibers if such use results in a rigid lining and a flexible lining is desired.

The appellant's contention that the claimed process produces an entirely different product or article from Simon et al. (Br. 23, 24) is inaccurate and irrelevant. Although Simon et al. indicate a preferred utilization of their product as housings or enclosures for electrical apparatus or radar equipment, other uses requiring analogous resilient materials would be apparent to the art. Certainly, the preferred uses of Simon et al. would not eliminate the provision of *either* a flexible foam *or* a flexible lining (skin). The provision of flexibility in the combination would be equally suggested to a skilled artisan or technologist where the proposed use called for or permitted such flexibility.

6. Consideration of other arguments by appellant

The contention advanced by appellant that the ground of rejection was shifted first by the Board of Appeals and again by the Solicitor is completely unfounded (J.A. 24 to 26). Although the Examiner (J.A. 98) used the language "fully met" in rejecting claim 21 (the predecessor to claim 28 on appeal), it is perfectly clear from his discussion of that rejection (J.A. 100), indicating that the differences involved were not patentably significant, that the rejection was based on 35 U.S.C. 103 and not on 35 U.S.C. 102. Consequently, the Board of Appeals did not shift the basis of the rejection.

Moreover, it is transparently clear from the preceding discussion, that the same ground of rejection was relied on by the appellee during the trial. The patent to Van Swaay and the German patent constitute documentary evidence that is merely cumulative with respect to the testimony of appellant's witness. In this connection, it is noted that the appellant did not object to the admission of these patents into evidence (J.A. 34, 37). Consequently, the appellant's suggestion that the "normal presumption of correctness of the Patent Office decision is not present in this case" is totally unwarranted.

Appellant's further assertion that the "decision of the Board of Appeals is based upon assumptions which the evidence at trial has demonstrated to be erroneous" and the arguments pursuant thereto (Br. 27, 28) have been considered at length in the preceding portions of this brief. Also, the allegation that the presumption in favor of the decision by the Patent Office tribunals was destroyed by appellant's "new evidence" and that the District Court's decision is not consistent with "this new evidence" has been fully treated hereinabove. Finally, the appellant's contention that the "District Court's opinion as to obviousness of the subject matter of the claim is a conclusion of law" is contrary to a long line of decisions of this Court collated in *Standard Oil Development Co.* v. *Marzall,* 86 U.S. App. D.C. 210, 181 F. 2d 280, that patentability or non-patentability is a finding of fact.

CONCLUSION

Claim 28 on appeal, it is submitted, was properly refused to the appellant on the ground that it is merely directed to an old process applied to known analogous materials. Accordingly, it is further submitted that the judgment appealed from was correct and should be affirmed.

Respectfully submitted.

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APPELLANT'S REPLY BRIEF

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 18,074

HUDSON FOAM PLASTICS CORPORATION,
Appellant,

v.

DAVID L. LADD,
Commissioner of Patents,
Appellee.

APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

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United States Court of Appeals
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The thrust of the Commissioner's argument is that the District Court's decision "has a rational basis in the record" and that, therefore, "no warrant exists for an independent review" by this Court of the evidence in view of Rule 52 (a) of the Federal Rules of Civil Procedure. This is evident from the Statement of Questions Presented [Appellee's Brief (I)].

Were these questions answered in the affirmative as the Commissioner contends, appeals to this Court in actions under 35 U.S.C. 145 would be futile and the statutory right of appeal rendered meaningless. The true rule is that the issue of patentability involves first a determination of the facts as to what the inventor has done in view of the prior art, and second a conclusion as to patentability based upon such facts. This conclusion is one of law and to it Rule 52 (a) is inapplicable. This requires no extended citation of cases, see, for example New Products Corp. v. Outboard, Marine & Manufacturing Co., 263 F. 2d 521 (7th Cir. 1959), cert. denied 359 U.S. 1012 (1959).

As to the facts, they are unquestionably reviewable, but the findings as to them will not be disturbed unless clearly erroneous. Appellant's contention is that they are clearly erroneous as being not sustained by the record and inconsistent therewith. Both the Board of Appeals and the District Judge found that the process of claim 28 is old and that the materials are analogous, but this finding by the Board is unsupported by any evidence at all and is only an opinion without any basis therefor being stated. And the finding by the District Judge is merely a repetition of the Board's opinion and again with no evidence to sustain it since the Commissioner offered no such evidence.

Actually, the finding is erroneous. All of Simon's preformed linings contain fibre glass. The lining of appellant's claim is for one comprised entirely of resin. The omission of fibre glass is nowhere suggested by Simon. He does suggest that a resin may be added. When so added Simon's linings still contain fibre glass and thus fail to give the advantages and the functions of appellant's film consisting entirely of resin (see Appellant's Brief, pages 18-19). Not only is the finding that the materials are analogous erroneous; but the finding that the process is old is also erroneous. As pointed out in appellant's main brief, the step of providing a film for direct application to the inner surface of the mold is wholly novel and entirely different from the application of a preformed lining which has to be manipulated so as to drape it over the inner surface of the mold. Moreover, the material employed by appellant in the reaction for forming the foam whereby the latter is flexible rather than rigid is not analogous to a material which makes the foam rigid. Appellant's resilient foam results from the use of an essentially linear polyester which is chemically different from the essentially branched polyester used to make a rigid foam. Also, it has not been established that the mixture of materials used, as recited in the claim on appeal, are old. This finding is admittedly based upon hearsay, that is, "upon what he (Ziemann) had heard from others" (Appellee's Brief, page 13). The fact is that Mr. Ziemann did not possess any first-hand knowledge of resilient foams before 1958 (J.A. 32).

The Commissioner's quotation of Newell's answer to an isolated question (Appellee's Brief, page 15) disregards the context in which the question and answer appeared. Newell had just testified (J.A. 61) that at the time of trial there was enough knowledge to substitute a resilient foam for a rigid foam but that he doubted it could have been done when Simon filed his application. Newell's quoted answer merely reaffirms his statement that as of the date of the trial, i.e., years after appellant's disclosure, it would be obvious to make the substitution.

Coming now to the legal conclusion as to patentability, cases holding that there is no invention in the use of an old process with analogous materials are not applicable here. Appellant's process is not old, being significantly different from Simon's, particularly in the first step. And, moreover, a new use in the form of a new result is obtained. [Cf. Joseph

Bancroft & Sons Co. v. Watson, Commissioner of Patents, 170 F. Supp. 78 (D.D.C. 1959)].

Respectfully submitted,

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